

THE
MEDICAL JOURNAL
OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. II.—4TH YEAR—No. 13.

SYDNEY: SATURDAY, SEPTEMBER 29, 1917.

PRICE 6D.

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No. 13.

NOTES ON A CASE OF SYSTEMIC BLASTOMYCOSIS—BLASTOMYCOTIC CEREBRO-SPINAL MENINGITIS.

I.—Clinical Notes.

By Harry Swift, M.D. (Cantab.), M.R.C.S. (Eng.),
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II.—Microbiological Notes.

By Lionel B. Bull, B.V.Sc.,
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Pathology and Bacteriology, Adelaide Hospital.

I.—Clinical Notes.

The patient, Lum. C., æt. 53 years, a Chinaman, born in China, thirty years in South Australia, was admitted to the Adelaide Hospital on December 27, 1916.

He complained of a severe and persistent headache, which had been continuous for five weeks. The pain was in the forehead, and also through to the back of the neck. The only other complaint was that of failing vision. He thought he could not see as well as he could before the onset of the headache.

There was no history of any affection of the skin, nor of any lung trouble.

On examination, a fairly healthy, well-preserved man, with wrinkled brow, as though in pain, restless and moaningly occasionally, is seen. The pupils are equal and active. The tongue is furred. The pulse-beat is 80 and is regular; its tension is slightly increased. The vessels are apparently normal. The body temperature is 37.1° C. The reflexes are equal and active. No ataxia is present, but he is rather weak on his feet.

Urine.—Specific gravity 1.012, acid, clear, no albumin, no sugar, no pus.

No abnormality is detected anywhere. The skin is free from any eruption. The *fundus oculi* are normal.

For the first week there was little alteration in the condition; the headache continued to be the only prominent symptom, except that there was a daily rise of temperature to 37.7° or 37.8° C. in the evening, with a morning remission to normal.

The pulse rate remained regular, and the respirations 20 and regular.

On the fourth evening the temperature was 38.3° C.; the pulse-rate 108. The headache was more severe. No other symptoms were noted, except that the patellar reflex was excited with difficulty.

On the 7th the temperature was below normal; the pulse-rate was about 100 and headache was very severe.

On the 8th 20 c.cm. of turbid fluid were drawn off, under considerable pressure, from the cerebro-spinal canal. For 24 hours after the puncture the patient was quite comfortable, and slept well, but the headache returned worse than ever. Lumbar puncture was again performed, and 25 c.cm. of similar fluid were withdrawn.

Very little, if any, relief followed. Marked deafness was now noted. The left pupil was much larger than the right. The temperature again rose to 37.8° C., and the pulse-rate to 100. The patellar reflex was absent. The patient died quite suddenly at 5.0 a.m. on the 10th.

II.—Microbiological Notes.

Cerebro-Spinal Fluid.

The cerebro-spinal fluid was cloudy, but colourless. A thick white deposit was thrown down in the centrifuge. On pouring off the supernatant fluid the deposit was found to be "greasy" in character. Smears of the deposit prepared and stained in the

ordinary way failed to give a clear definition under the microscope.

Microscopic examination of unstained, moist specimens revealed a budding yeast-like organism. The protoplasm was finely granular, vacuolated and very often contained one or more highly refractile bodies. When examined under the lower power of the microscope, a very faint, slightly refractile, "gelatinous" capsule was detected. Under the higher power this capsule was not detected. The capsule, however, was well demonstrated by emulsifying some of the deposit with Indian ink and making a thin film. It was even better demonstrated by a method recently described by Benians.¹ This method consisted of placing a drop of a 2% aqueous solution of Congo red on a slide and emulsifying in this a loopful of the deposit. This was then spread into a film of medium thickness, dried in the air and then washed with a 1% solution of hydrochloric acid in absolute alcohol and allowed to dry.

Under $\frac{1}{12}$ inch oil immersion lens the background was seen to be pale blue, the capsule clear and colourless, and the yeast cells pale blue in colour. The capsule possessed a diameter of 29.2 μ , which was very constant. The diameter of the yeast cells varied from 4.9 μ to 13 μ . Buds of all sizes were seen, and were contained within the capsule without causing any alteration in its contour. Buds which had become independent showed no capsule.

Tubes of culture media were inoculated and incubated at 37° C. under both aerobic and anaerobic conditions. On the seventh day of incubation a slight growth appeared on tubes of Löffler's blood serum kept under aerobic conditions. No growth appeared on tubes kept either under anaerobic conditions or in the broth and agar tubes kept aerobically.

On the ninth day, a thick, piled-up growth was observed on the serum tubes kept aerobically. This was translucent in appearance, and resembled a piece of thick boiled starch. On microscopical examination yeast-like bodies were found. Many of these showed an attempt at mycelial formation (see Fig. I., B), but the majority of the forms reproduced by budding.

What were taken to be endospores were observed in preparations kept in sealed moist chambers for several days. These highly refractile endospores were observed both in yeast cells taken direct from the cerebro-spinal fluid and those from culture tubes when treated as described.

The yeast cell possessed a double contoured outline and a finely granular, sometimes vacuolated, cytoplasm. The cells obtained from cultures varied from 4 μ to 14 μ in diameter; forms from 6 μ to 8 μ in diameter predominated.

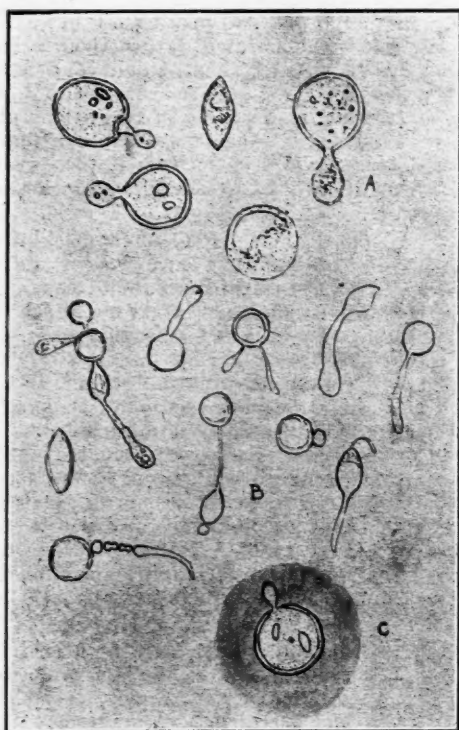
Subcultures on Löffler's blood serum gave in 24 hours a luxuriant, translucent, moist growth, which ran down the surface of the medium.

No growth was obtained by inoculating agar or broth tubes from the primary or secondary cultures on serum.

After repeated subculture on serum the organism was found to grow easily and luxuriantly on plain agar, glucose agar and Sabouraud's agar, and also a slight growth in broth. On the various agar tubes the growth was less moist than on serum, and with age became yellowish in colour.

In none of the subcultures was any attempt at mycelial formation observed, even after prolonged incubation.

No growth could be obtained at any time in tubes kept under anaerobic conditions, and it was found that growth was very poor in tubes kept in a sealed moist chamber.



Rough Sketch of (A) Forms Seen in the Cerebro-Spinal Fluid (capsule not shown), (B) Forms from Primary Culture after Nine Days' Incubation, showing an attempt at mycelial formation, (C) Form Seen in Cerebro-Spinal Fluid with Capsule Indicated.

Rabbit and guinea-pig inoculations gave negative results.

Examination of Tissues.

A post-mortem examination was made by Dr. W. Ray. A diffuse cerebro-spinal meningitis was discovered, and an acute myelitis of the dorsal portion of the cord, affecting both the grey and white matter.

No other organs of the body were found to present any marked abnormality.

Typical yeast-like organisms were obtained in scrapings from the meninges and from the softened portion of the cord.

Microscopical examination showed a marked increase in lymphocytes and endothelial cells in the meninges. There was at times a slight tendency towards the formation of multinucleated cells. The yeast-like organisms were scattered diffusely throughout the meninges, and did not appear to be intracellular at any time. Budding formation was at times observed.

Sections of the cord showed a diffuse scattering of the yeast-like organisms throughout. There were also numerous, very small, highly refractile bodies scattered throughout. These at times showed a typical budding, and varied in size from 2μ up to the larger forms.

They are apparently similar to the small forms described by Wade.² Apart from degeneration, there was no tissue reaction in the cord.

It was found difficult to stain the organisms which were examined, for the most part, in unstained sections.

At no time could a capsule be demonstrated in the organisms observed in the tissues.

III.—Discussion.

As far as can be ascertained, this case is unique in that the primary and only lesion was situated in the central nervous system.

In all previously recorded cases the primary lesion has been either pulmonary or cutaneous. In the former evidence of lung mischief is generally plainly manifest for months or years; and in the latter the lesions are not likely to be overlooked, owing to their chronicity, size, and defiance of treatment.

It is possible, but very improbable, that a small pulmonary lesion was overlooked, both in the ward and in the post-mortem room.

The bony structures were not examined, but there was nothing to suggest that any lesions were to be found in these parts.

In a paper read by Dr. T. H. Hurley³ before the American Association of Pathology and Bacteriology in April, 1915, he states that either the skin or the lungs are invariably involved. In a series of 21 cases in which complete post-mortem examinations were made, the lung was uninvolved in one case only, and in but one similarly was the skin free from lesion. Metastases were found, in order of frequency, in bone, spleen, liver, brain and meninges, lymph nodes, etc.

Some observers have reported that living in cellars or underground habitations predisposes to blastomycotic infection.

The micro-organism found appears to be that commonly designated *Cryptococcus gilchristi*. The presence of a capsule has not previously been described as occurring in this organism. It is impossible to come to any conclusions, but it would appear possible that the capsule was formed by the organism after it had been washed into the cerebro-spinal fluid, where, presumably, little or no further growth would occur. *Saccharomyces tumefaciens* found by Busse and figured by Curtis⁴ is shown to possess a capsule similar to the one observed by us.

As far as we are aware, no previous case of blasto-

mycosis has been recorded as occurring in man in Australia.

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- ³ Hurley, Thos. D.—"A Unique Lesion of the Heart in Systemic Blastomycosis," *Journ. Med. Research*, Vol. XXXIII, No. 3, January, 1916, p. 499.
- ⁴ Curtis—As reproduced in *Atlas des Champignons parasites et pathogènes de l'homme et des animaux*, Henri Coupin, Planch. XXVI., 2.

NOTES ON WAR INJURIES OF THE EAR.

By R. E. Shuter, M.D.,

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In the time during which I acted as Consulting Aural Surgeon to the Australian Imperial Force. I was able to make a fairly complete examination of more than 300 cases of injury to the ear occurring as the result of war service, and, in addition, I saw a considerable number of patients in whom, owing to want of time or absence of the requisite instruments, the examination, while enabling one to diagnose and dispose of the case, was not sufficiently detailed to base upon it authoritative conclusions. These cases are, however, of use in confirming the general conclusions that I have arrived at from an analysis of the more complete series of cases.

It is important to note that I saw the cases at periods varying from one to several months after the injury had been received. The series embraces cases both from Gallipoli and France.

I have also, for purposes of comparison, examined 30 men belonging to different branches of the artillery chosen at random, who made no complaint as regards their ear.

I.—Injuries to the External Ear.

I have seen destruction of the auricle of varying amount, up to complete, as a result of traumatism from some species of projectile. They were of no particular interest to the aural surgeon, unless associated with internal ear symptoms. Two cases, however, which may be placed under this category, are worthy of mention.

In one case a Turkish bullet had entered just below the external meatus on one side, and made its exit immediately below the external meatus of the opposite side. The boy had complete destruction of function of the internal ear on both sides, but was otherwise well. There were no motor or sensory symptoms or other disability apart from his ear lesion. In the second case the bullet entered through the external meatus, destroying the facial nerve in the lower part of the aqueduct of Fallopius, and causing permanent facial paralysis; it then apparently passed down the external meatus, in front of the tympanic membrane, above the internal carotid artery, and emerged through the zygomatic process

of the opposite side. When I saw the patient, complete healing had taken place, the end of the meatus was occupied by white scar tissue, and on closer examination the membrane itself was seen posterior to this, more obliquely placed than normal, and with no obvious disturbance of its landmarks. Moreover, the functions of the internal ear, notwithstanding this grave traumatism in its immediate neighbourhood, was very slightly disturbed, the tests yielding the following results: Watch, contact; whisper, 2.5 cm. (1 inch); voice, 4.6 metres (5 yards); Rinne's test minus and bone conduction increased. The retention of function of the internal ear in a case of such a severe injury in its immediate neighbourhood is remarkable and unique in my experience.

II.—Middle Ear.

It is perhaps pertinent to state here that the experience of myself and the aural surgeons attached to the Imperial and Canadian forces has shown us that it is an economic mistake to pass men for active service who suffer from discharging ears or destruction of the drum. Under the deleterious environment of camp and trench life these affections, even if they have been quiescent for a long time, speedily become active, and the soldier becomes a chronic attendant at sick parades, or spends the greater portion of his time in and out of hospitals. He has, moreover, in his discharging ear a constant excuse for parading sick when his services are most required, an excuse which many take full advantage of. He is a constant source of trouble to the Regimental Medical Officer, occupies beds which are urgently required for other purposes and, with few exceptions, the small amount of service obtained from him is quite disproportionate to the time and expense entailed by his training and transport. The above remarks do not apply to officers, who are generally more able and ready to attend to their personal cleanliness.

Rupture of the tympanic membrane is frequently seen as the result of the bursting of a high explosive shell or bomb in the immediate neighbourhood, or as a result of being buried. The rupture may occur in any part of the *membrana tensa*, is more or less extensive, and sometimes heals under a blood clot by first intention. The latter result is, in my experience, rare; this may be owing to the field of my observation, as obviously cases which speedily recovered would not be sent to the base. The more common result is a severe and obstinate otitis media, accompanied by an extensive destruction of the drum. The destruction is so great that at first I considered these cases must be a recrudescence of suppuration in previously diseased ears. Further experience of myself and others, however, demonstrated that this was erroneous. The obstinate suppuration and rapid destruction of the drum, analogous to what one sees in scarlet and other acute infectious fevers, is, no doubt, due to the extensive laceration and direct infection at the time of injury, and to the low vitality and lessened resistance of soldiers on active service, an expression of which is seen in such complaints as pyorrhœa, Vincent's angina, trench nephritis, etc.

I.—Internal Ear.

The internal ear may be injured (a) as a result of direct traumatism of some part of the skull, and (b) indirectly by the wind caused by an explosion in the immediate neighbourhood, so-called concussion deafness.

(a) No definite relationship obtains between the place and severity of the injury to the skull and the lesion of the internal ear. As shown in case 2, quoted above, the traumatism may be severe and in the immediate neighbourhood, and yet the internal ear escape with only a mild disturbance of function. This is certainly rare. Fracture or a blow on the skull, sufficient to cause unconsciousness and severe laceration of the soft tissues, however, does not necessarily result in injury to the ear; but in those cases in which the ear is affected I have always found both the result of examination and the history to show a definite organic change in the cochlea, or vestibule, or both. As regards the history, one gets in most cases a definite and voluntary statement of severe giddiness as an immediate result, the giddiness lasting for a period covering some weeks. This is characteristic of sudden destruction of one vestibule. Moreover, the deafness noticed soon after the injury, or after recovering consciousness, has remained of constant degree; there has been no improvement in hearing with time. On examination, these cases usually show absolute or profound deafness in the affected ear. If any hearing remains, it is for noise only; words cannot be defined, and the hearing is of no practical utility. Examination of the state of the semicircular canals shows that their function is either entirely absent or greatly depreciated. In some very beautiful specimens of the pathological condition caused by these injuries, prepared by Mr. J. S. Fraser, of Edinburgh, and exhibited at a meeting of the Royal Society of Medicine, localized hæmorrhages were found to be present between the membranous and bony labyrinth, associated with some lymphoid exudation into the perilymphatic space. An interesting feature of these cases was that at the time at which my examination was made, for the most part from one to several months after the receipt of the injury, no spontaneous nystagmus was present, equilibrium disturbance was not prominent, spontaneous pointing errors were sometimes, but not always, present, but on asking the patient to walk a straight line with his eyes shut, his attempt was markedly different to that of a man with normal ears. He either deviated to one side or the other, or, if he succeeded in reaching his objective, his effort was laborious and wanting in automaticity. There is no doubt that this latter test is the most exact in determining a disturbance in orientation due to the destruction of one vestibule, and can be elicited long after disturbances in equilibrium and pointing have been centrally adjusted.

(b) Concussion Deafness.—There are several points of extreme interest attached to this portion of my subject. I was struck with the frequent association of this lesion with a large, patent, straight meatus. I have no statistics upon which I can base an absolute opinion, but, accustomed as I am to examine a large number of ears daily, I am personally satisfied that the presence of this condition of the

meatus has a distinct influence in rendering a man liable to concussion deafness.

Concussion deafness is not due to the impact of sound waves upon the tympanic membrane, but is due to the dynamic waves, or perhaps it would be better to express it as the sudden violent blast of wind caused by the bursting of a high explosive shell, mine, or bomb, especially if it occurs in a confined space. In the majority of cases the patients gave a history of the explosion being on one side. They were frequently thrown over, sometimes were unconscious for a short time, and on recovery found themselves deaf with tinnitus in both ears. After a time the hearing returned in one ear, the ear on the side of the explosion remaining deaf. Examination would show unilateral deafness, the ear on the side away from the explosion being but slightly depreciated. In cases which were distinctly rarer, in which the shell exploded in front, above or behind the patient, partial bilateral deafness was usually found, the degree of deafness never being as marked as in the unilateral cases.

In corroboration of my statement that the condition is not due to the sound waves, I may say that the result of my examination of the 30 artillery men of whom I have spoken, of service ranging from one up to two and a half years, showed no alteration or depreciation of function in their ears.

The symptom-complex and combination of signs in concussion deafness is quite definite, and can be stated as follows:—

Symptoms.

- (1) Subjective deafness, constant in degree, coming on suddenly, its onset associated with an explosion of some sort.
- (2) Aparacusis, that is, hearing best in a quiet place.
- (3) Tinnitus in the affected ear.

Signs.

- (1) Watch and whisper badly heard compared with the conversational voice.
- (2) By air conduction, the lower fork (C 128 dv.) very much better heard than the higher fork (C 2048 dv.) compared with the normal ear. The disproportion for hearing in testing with these forks, compared with the normal ear, is very marked.
- (3) Greatly lessened acuity of hearing by bone conduction as tested by C or C¹ fork.
- (4) A fairly complete range, as compared with acuity, of hearing, as tested by the forks and monochord.

Now it has been usually assumed that signs (1), (2) and (3) indicate disease of the internal ear. I first wish to point out that in considering this question it is inaccurate to do so from the point of view of the middle and internal ear. The internal ear embraces the perilymph and the endolymph, which are parts of the conducting apparatus of the ear. In theorizing as to the part of the organ that is at fault in concussion deafness, it is more accurate to divide the ear into the conducting and the perceiving apparatus, the conducting embracing the tympanic membrane, ossicles, perilymph and endolymph; the perceiving, Corti's organ, the spiral ganglion, the auditory nerve and auditory centre.

That concussion deafness is due to a central disturbance, as has been suggested by some, can, I think, be disproved by the fact that a prominent and uniform feature of the condition is that it is unilateral and ipsilateral, the ear affected being that most exposed to the wind caused by the explosion.

I have never seen anything to lead me to suppose that there is a psychical element present. The combination of signs and symptoms is definite and uniform, there is no suggestion of a psychical element in the patient's behaviour, and in the latter condition, that is, where the deafness is due to the psychical effect of shell-shock, the deafness is more profound and bilateral.

I may say here that, although I am not prepared to speak with absoluteness as to the lesion that gives rise to concussion deafness, I strongly suspect that the middle ear is the part largely, if not wholly, affected. I shall, in the remarks which follow, attempt to give my reasons for holding this opinion at present. Although my opinion is not fully defined, and my series of examinations far from complete, as, owing to the exigencies of war service, I have been unable to follow up the further course of these cases, I publish these notes with the hope that my colleagues engaged in ear work at the military hospitals in Australia may amplify, confirm, or dispute the statements now made.

The generally-accepted theory that signs (1), (2) and (3) indicate deafness due to an internal ear lesion is, as far as I am aware, based on very slender evidence, depending, as it does, upon the belief that the lower whorl of the cochlea is specialized for the perception of the higher notes, and that, being closest to the vestibule and oval and round windows, it is the part most exposed to infection or traumatism through those channels. In concussion deafness, however, it is the acuity, and not the range of hearing that is chiefly affected. It is not that the higher notes are not heard at all, but that they are not as well heard, proportionately, as the lower notes, compared with a normal ear. Again, diminished bone conduction has usually been taken as an expression of internal ear or nerve mischief; this also seems to me an unwarrantable assumption. We know that the degree of bone conduction can be both increased and diminished by pathological changes in the middle ear, as well as by temporary changes physiologically induced. As an illustration of the former, I may instance otosclerosis, a condition in which an early and prominent pathological change is fixation of the *stapes* in the oval window, due to ossification of the annular ligament. In this disease acuity of hearing by bone conduction is markedly increased. It is also often markedly increased in post-suppurative changes, or adhesive catarrh of the middle ear, in which limitation of movement of the ossicular chain can be easily demonstrated or reasonably assumed.

Physiologically, acuity of hearing in bone conduction can be increased by closing the meatus by the finger, or by other means, which has the effect of temporarily impeding the movements of the ossicular chain. It is also increased by inflating the middle ear by Valsalva's method. If, on the other

hand, the meatus is not only closed, but pressure exercised upon the tympanic membrane by compression of the column of air in the meatus by means of a Siegel's speculum (Gellé's test), the acuity of hearing by bone conduction is diminished.

A consideration of the above facts shows us, therefore, that acuity of hearing by bone conduction can be both increased and diminished by an alteration in the integrity of the conduction apparatus, and disputes the assumption that a diminution in the acuity of hearing by bone conduction indicates *per se* a lesion of the perceiving apparatus, as is so frequently stated. I am inclined to go even further, and say that, to my mind, it is likely that acuity of hearing by bone conduction depends largely upon the normal movements of the ossicular chain and the capacity of a normal voluntary or reflex contraction of the muscles of the middle ear, the *stapedius* or *tensor tympani*, or both, whereby the ossicles and membrane are placed in the best condition to carry sound waves of low energy.

This symptom, in concussion deafness, therefore, of diminished bone conduction does not necessarily indicate a lesion of the perceiving apparatus, but may very well be, and to my mind very probably is, due to an alteration in the apparatus of conduction.

Let us now turn our attention to another uniform sign of the condition under consideration, *viz.*, the proportionately greater acuity of hearing by air conduction for the lower (C 128) fork as compared with the higher (C 2048). This sign is very marked, and in some cases even startling. We know that the energy of sound waves, that is, the capacity they have of being transmitted either for a long distance through the same medium, or through media of varying density offering obstruction to their progress, depends (*i.*) upon the pitch, the higher notes having a greater energy than the lower, other things being equal, and (*ii.*) upon the amplitude of the sound waves.

Using forks for testing the hearing by air conduction, we find in otosclerosis and obstructive middle ear lesions, where the conducting apparatus, tympanic membrane and ossicles are more or less fixed, that the acuity of hearing for the low forks is diminished to a proportionately greater extent than that for the higher. In concussion deafness, the reverse is the case. Can this be due to an undue laxity of the middle ear structures or diminished power of accommodation of the muscles?

We are, I think, justified in assuming that the sound waves are conducted from the air in the external meatus to the perilymph by the tympanic membrane and ossicles acting as a whole, or, at any rate, that this is the dominant channel by which sound waves are conducted to Corti's organ. No doubt the air in the middle ear also vibrates in sympathy with the rest of the structures, but the membrane closing the round window, convex as it is towards the *scala tympani*, does not lend itself to transmission of sound waves by this channel, its inherent tonicity being probably sufficient to lessen greatly or to refract entirely the waves impinging upon it.

Although it has not, and probably never will be demonstrated, what the special function of the com-

plicated ossicular chain, with its muscles the *stapedius* and *tensor tympani*, is, yet one can reasonably assume that nature did not provide such a complicated mechanism unless its function was definite and important. Enervated as these muscles are by the facial nerve, and the fifth through the otic ganglion, respectively, we see a distinct analogy between them and the recti and ciliary muscles of the eye, and it is a fairly reasonable assumption that one, at any rate, of their functions is that of accommodation for pitch and intensity of sound. No doubt they also exercise a protective influence against sound waves of a harmful intensity. I think, therefore, that it is extremely probable that this condition found in concussion deafness, *viz.*, a pronounced diminution in acuity of hearing by air conduction for high notes, associated with retention of range of hearing, that is, the high notes are heard, but only if strongly produced, is due to a disarrangement of the middle ear structures, whereby the normal action of the *stapedius* and *tensor tympani* muscles in accommodation for sounds of weak energy is interfered with or annulled.

I am aware that the theory has been enunciated, and has received the valuable support of Gray, of Glasgow, that sounds of high pitch are transmitted through the round window, and those of low by the ossicles and oval window. If this be true, it disproves necessarily the conclusions which I have stated above. I do not advance these opinions as absolute. They are merely tentative, my main object being to stimulate my colleagues, who are interested in this subject, to make use of the material furnished in such abundance by this most tragic war for further enquiry and observation. In these cases of concussion deafness we have a great opportunity for observation, and possible elucidation of the complicated question of the respective functions of the middle and internal ear, a question which is still obscure, and which, for reasons that are obvious to all aural surgeons, and which I need not elaborate, will probably never be answered as a result of experiment, but will have to be answered, if I may so express it, as a result of inductive, rather than deductive, reasoning.

The fact that concussion deafness is due to dynamic, and not to sound, waves has a practical bearing which should be widely known. Many dampers have been introduced for the purpose of protecting the hearing of those on active service. Of these, probably the Mallock-Armstrong is the most scientifically constructed. Apart from the fact that the inconvenience or discomfort of these is such that men will not wear them, we see that artillery men are not more liable to ear injury than others on active service. It is not the continuous noise of gun fire that affects the ear, but a chance explosion, which may occur to any one at any time, and it is obviously impracticable that the whole army should wear ear protectors day and night.

An intelligent friend of mine in the Royal Field Artillery, who has only one ear to depend upon, tells me that he himself found that he saved his good ear from tinnitus, etc., during a bombardment by jerking the sound ear away from the side of the ex-

plosion. If one is aware of the impending explosion and has the requisite presence of mind, the ears can be quite adequately protected by covering them with the hands and thus impeding the direct contact of the dynamic air waves upon the tympanic membrane.

SOME REMARKS ON THE OCCURRENCE OF THE "MYSTERIOUS DISEASE" IN SOUTHERN QUEENSLAND.

By A. Gerard Anderson, M.B. (Syd.),
Goondiwindi, Queensland.

During the months of February to May, 1917, fourteen cases of this disease came under my notice, in the district of Goondiwindi. Heavy rain had fallen a few weeks previously to the occurrence of the first case, and most of the patients were living in or near flooded areas.

Twelve patients were under 10 years of age, the other two being 10 and 38 years respectively. Of the twelve patients under 10, two were under 12 months, one under 3 years, four under 4 years, four under 5 years, and one under 8 years, the average age being 3 years. Of the patients under 10 years, eight recovered and four died. Both patients over 10 years died.

The following table shows the sudden appearance of the disease, with resulting high mortality among the earlier cases:—

Week.	No. of Cases.	Recovery.	Death.
First	4	2	2
Second	2	1	1
Third	1	0	1
Fourth	2	2	0
Sixth	1	0	1
Seventh	2	1	1
Ninth	1	1	0
Thirteenth	1	1	0

The onset of the disease was almost invariably sudden, with intense headache, fever, vomiting and convulsions. Convulsions occurred in 13 of the cases, within 12 hours of the onset, and often were the first symptom to call the parents' attention to the seriousness of the condition of the child. The convulsions were repeated in the majority of the cases in the first 36 hours, and the child then passed into a state of stupor, which deepened into coma, out of which, in fatal cases, the patient did not emerge. During the state of stupor, convulsions from time to time recurred, and could be easily produced by moving or disturbing the child in most cases.

The temperature varied from 38.9° to 40° C., and was marked with daily remissions (see Chart I.). The average period of fever was from five to seven days. It was noticed that no patient whose temperature exceeded 39.5° recovered.

The pulse-rate was rapid, rate of 140 usually accompanying a temperature of 38.9° C.

Early vomiting occurred in about half the cases (see Chart II.).

Neck rigidity was a constant symptom, occurring in twelve cases, whilst head retraction was in evidence in eight, but did not occur until about the third day of illness.

Delirium occurred in three cases only, deep coma being more in evidence in the majority. Delirium

was, however, a prominent feature of cases 4, 5 and 10, where retraction, spasm and opisthotonus were extremely marked, and created a vivid picture of cerebral irritation.

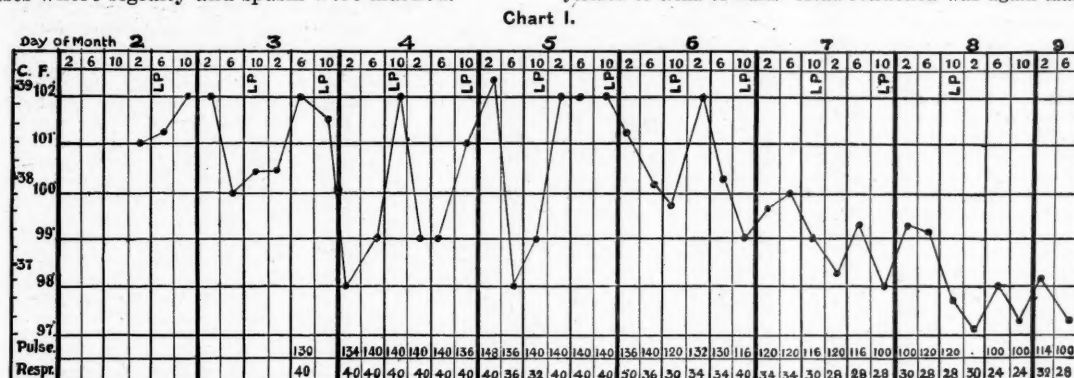
The gastro-enteric symptoms, apart from initial vomiting, were not much in evidence. In five cases green stools were passed after an initial purgative, but in no case was there diarrhoea.

Tâche cérébrale could not be elicited. Kernig's sign was uncertain, and was only found in those cases where rigidity and spasm were marked.

Chart II. gives in tabular form the symptoms and clinical findings for comparison.

Case I.—February 17, 1917. J.T., aged 2 years 8 months, male.

The patient had been ill for two days, commencing with fever and vomiting. When seen he was in a state of stupor, with head retracted. Lumbar puncture on 18th yielded 20 c.cm. of clear fluid, under increased pressure, after which the head retraction diminished, but the stupor remained. Within 24 hours the head had resumed its retracted position. Lumbar puncture again relieved, and yielded 40 c.cm. of fluid. Head retraction was again marked



Lumbar puncture was performed in ten cases. In seven cases there was increased cerebro-spinal fluid, with increased pressure; three were "dry" punctures (Nos. 3, 4 and 5). These latter cases were marked by the severity of the symptoms and fatal termination.

The cerebro-spinal fluid in five cases (Nos. 5, 7, 10, 11 and 12) was examined bacteriologically at the Department of Public Health, Queensland. In none were meningococci found, either on slide or by culture.

on the third day. Lumbar puncture was again carried out, and 10 c.cm. of cerebro-spinal fluid withdrawn. After this no further retraction took place, and the temperature gradually fell to normal, and the stupor passed off. Convalescence was uninterrupted, except for a short attack of diarrhoea.

Case II.—February 18, 1917. V.P., aged 3½ years, female. There was a history of incessant vomiting for three days, with high fever. The child was disinclined for any movement (which caused crying). There was improvement after the third day. When I saw the child on the eighth day it was stuporous, lying on its side and taking no interest in its surroundings. There was marked lateral nystagmus of both eyes. No lumbar puncture was performed, and

Chart II.

Case.	Name.	Age.	Date.	Continued Convulsions and Fever.	Continued Convulsions or Spasm.	Head Re-traction.	Opis- thotonus.	Paresis Unilateral.	Vomit- ing.	Green or Foul Stools.	Kernig's Sign.	No. of Lumbar Punctures.	Increased Cerebro- Spinal Fluid.	Recovery.	Death.
1	J.T.	3	17.2.17	+	+	+	—	—	+	—	—	3	+	1	..
2	V.P.	4	18.2.17	+	+	+	—	—	+	—	—	0	..	1	..
3	C.R.T.	4	18.2.17	+	+	—	—	—	—	—	—	1	1
4	G.A.	10	19.2.17	+	+	+	+	—	?	—	+	1	—	..	1
5	M.J.C.	4	26.2.17	+	+	+	+	—	+	—	+	1	—	..	1
6	F.B.	½	28.2.17	+	+	+	—	—	+	+	—	0	..	1	..
7	D.C.	3	3.3.17	+	+	+	—	—	—	+	—	1	+	..	1
8	M.T.	4	11.3.17	+	+	+	—	—	+	—	—	0	..	1	..
9	F.McC.	¾	11.3.17	+	+	+	—	—	+	+	—	0	..	1	..
10	T.B.	38	28.3.17	+	+	+	+	—	—	—	+	10	+	..	1
11	J.A.	3¾	31.3.17	+	+	+	—	—	—	+	—	2	+	..	1
12	N.C.	3	1.4.17	+	+	+	—	+	+	—	—	15	+	1	..
13	T.K.	7	16.4.17	+	—	+	—	—	+	—	—	2	+	1	..
14	W.S.	2	17.5.17	+	+	—	—	—	+	—	—	2	+	1	..

* Nystagmus.

† Tetanic Spasms.

The cerebro-spinal fluid was perfectly clear, except in Case X., and in most cases under considerable pressure. The average amount of fluid withdrawn at each puncture was 30 c.cm.

Convalescence.—The period of convalescence seemed to be directly proportional to the length of time the acute symptoms held sway. Intense muscular weakness, more particularly of the back and neck, remained many weeks after convalescence had begun.

the child recovered, all stupor and nystagmus having passed off within three weeks from the onset.

Case III.—February 18, 1917. C.R.T., aged 4 years, male.

The onset was sudden; the first symptoms were repeated convulsion and profound coma, out of which child did not emerge. There was no rigidity or head retraction. Kernig's sign was negative. Lumbar puncture was "dry." The coma lasted for four days, when death took place.

Case IV.—February 19, 1917. G.A., aged 7 years, female.

There was a history of incessant vomiting and acute headache for three days, followed by repeated spasms of a tetanic nature. When seen, the child was in a tetanic

convulsion, the head was retracted, there was acute opisthotonus, with extension of the arms and legs, and hyper-extension of the wrists and fingers. She was immediately removed to hospital, and lumbar puncture was performed. No fluid was obtained. Death occurred within half an hour of admission. No wound of possible infection by *Bacillus tetani* was found. This case presented marked similarity to cases 5 and 10 in its clinical aspect.

Case V.—February 26, 1917. M.T.C., aged 4 years, female.

There was a history of incessant vomiting, headache and fever, stupor and convulsive movements. The patient died in three days with violent tetanic spasms and extreme opisthotonus. Lumbar puncture was performed four times, but no fluid was obtained. Kernig's sign was doubtful. Post-mortem examination: The meninges of brain were apparently normal. There was no inflammation of the membranes, no increase or turbidity of the cerebro-spinal fluid, nor any suppurative foci. A specimen of the cerebro-spinal fluid sent for examination was found to be contaminated. No gross lesion of the brain tissue was observed.

Case VI.—February 28, 1917. F.B., aged 7 months, female.

The patient had visited patient V.P. (Case II.) a week previously. The onset was sudden, with convulsions, followed by stupor and repeated slight convulsions for 48 hours. She vomited occasionally. There was some retraction of the head. No lumbar puncture was carried out. Improvement followed after four days, and recovery ensued.

Case VII.—March 2, 1917. D.C., aged 3 years, male, brother of M.T.C. (Case V.).

The onset was gradual, with symptoms of feverishness and irritability. He was seen on the first day of illness. The temperature was 37.2° C. He was running about. On the second day he was drowsy, and the temperature was 37.8° C. There was no vomiting. On the third day the temperature was 38.3° C. The patient was more drowsy and objected to any movement. Kernig's sign was negative. On the fifth day, with a temperature of 39.4° C., convulsions set in, which continued to the seventh day, with frequent muscular spasms and rigidity of arms and legs; no opisthotonus. Death occurred on this day. Lumbar puncture was carried out on two occasions, when it was found that the fluid escaped under pressure. An examination of the fluid failed to reveal meningococci.

Case VIII.—March 11, 1917. M.T., aged 2 years 3 months, female.

The onset was sudden, with convulsions and vomiting. Profound stupor and a temperature, ranging up to 38.9° C., with remissions, lasted for four days. The patient was unconscious for a week. There was no head retraction. No lumbar puncture was carried out. Gradual recovery followed.

Case IX.—March 11, 1917. B.McC., aged 3 months.

There was a sudden onset, with repeated convulsions, followed by stupor lasting three days. Some gastric disturbance was present. The recovery was gradual. No lumbar puncture was performed.

Case X.—March 28, 1917. T.B., aged 38 years, male, labourer.

The illness commenced with an almost unbearable frontal headache. Within 12 hours, he had a convulsion with violent spasms and opisthotonus, which continued throughout the night. He was admitted to hospital on March 29, 1917. He was entirely unconscious, with noisy delirium. The sphincters were relaxed, the head retracted and frequent muscular spasm was noted. Kernig's sign was present. The temperature was 39.4° C. From the second day of illness lumbar puncture was performed every 8 or 12 hours; 60 c.cm. of fluid were drawn off at each tapping and anti-meningococcal serum (P.D. & Co.) injected, as there was slight turbidity of the fluid. On the fifth day the patient had lucid intervals, but head retraction was still marked, and there was difficulty in swallowing. The temperature had fallen to 37.2° C. on the sixth day, but broncho-pneumonia set in. Death occurred on the eighth day. The bacteriological tests carried out with the cerebro-spinal fluid were negative.

Case XI.—March 31, 1917. J.A., aged 3½ years, female.

The illness began with a high temperature and drowsiness. There was passage of green, slimy stools after purgative on the third day. Convulsions set in, and were fol-

lowed by deep coma and death within 24 hours. Lumbar puncture yielded clear fluid under increased pressure. The bacteriological examination for the meningococcus was negative.

Case XII.—April 1, 1917. N.C., aged 3 years, female.

The child had had some gastric disturbance for two days, accompanied by fever. A convulsion took place on the third day. She was unconscious for seven days. Lumbar puncture was performed immediately after the onset of the convulsion and clear fluid under increased pressure was obtained. The temperature was 38.9° C., and the pulse-rate 130-140. There were remissions of fever for six days, when the temperature fell to 37.2° C., and remained slightly above the normal level for seven weeks. During the fourth week contraction of the muscles of the arms and legs became persistent, particularly on the right side. The knees were flexed on the abdomen. Lumbar puncture was again resorted to, and performed twice weekly until the 47th day of illness, when the temperature finally became normal, and the arms and legs could be fully extended. On each occasion, 30 c.cm. of cerebro-spinal fluid were removed, and immediate benefit in lessening of twitchings and rigidity was observed in the earlier days of the illness and later in the muscular contractions. The bacteriological report was negative. This patient is now well, and shows no signs of paresis or other disability.

Case XIII.—April 16, 1917. T.K., aged 8 years, male.

There was a history of whooping cough for a few weeks. The onset of the illness was sudden, with convulsions, which recurred in six hours. He was seen 12 hours after the onset. There was no stupor, and he was able to answer questions. The temperature was 40° C. He was removed to hospital. On the second day he became drowsy, with slight rigidity of the neck. Lumbar puncture was performed on the third and fourth days, and 30 c.cm. of cerebro-spinal fluid, under increased pressure, were withdrawn. On the fourth day, the temperature began to drop and reached the normal line on the sixth day. Convalescence was uninterrupted.

Case XIV.—May 17, 1917. W.S., aged 2 years 8 months, male.

The onset was sudden, with twitchings. The child was seen on the same day, when he was semi-comatose. The temperature was 38.4° C. and the pulse-rate 132. Convulsive movements of face and limbs were noted, but no definite convulsion. This condition lasted for five days. Lumbar puncture was performed on the fifth day and yielded 30 c.cm. of cerebro-spinal fluid. The patient was removed to hospital on the sixth day. Lumbar puncture was again carried out, but very little fluid obtained. The temperature was 37.8° C., and the pulse-rate 144. The child remained drowsy and showed signs of paresis of the right side of the face and limbs. Lumbar puncture was carried out on the eighth day, but no fluid obtained. The temperature was 37.8° C. and the pulse-rate 128. The temperature reached the normal line on the ninth day. Paresis of the right side remained, with no apparent improvement. Lumbar puncture was again resorted to on June 12, 1917, and 30 c.cm. of fluid were withdrawn, after which date the patient improved, and a month later was walking without any drag of the affected leg, although he has not regained the activity of his speech centre.

Reviews.

KALA-AZAR.

Dr. Upendranath Brahmachari's book on "Kala Azar: Its Treatment" will probably possess but an academic interest for the majority of Australian students of medical literature at the present time. So far, this grave disease has not gained a footing in Australia, but the return of troops from foreign service will bring a material risk of its intro-

¹ Kala-Azar: Its Treatment, by Upendranath Brahmachari, M.A., M.D., Ph.D., with a Foreword by Surgeon-General W. R. Edwards, C.B., C.M.G., M.D., I.M.S.; 1917. Calcutta: Butterworth & Co. (India), Ltd.; Sydney: Butterworth & Co. (Australia), Ltd.; Demy 8vo., pp. 121; illustrated. Price, 8s. 6d.

duction, in common with other exotic diseases from which we are as yet free.

Kala-azar is common in Egypt and Arabia, as well as in India, and its geographical range extends over Burma, China, Ceylon, the Sudan, Algeria and the Levant. The infantile form exists also in Greece, in parts of Eastern Europe, and in Northern Africa. Bed-bugs are suspected of conveying the *Leishmania donovani* Nicolle, which is the causative agent of the Indian form, whilst the dog flea is believed to act as a vector of the *Leishmania infantum* from its reservoir, the dog. Insidious in its onset, the disease becomes characterized by steadily increasing emaciation, greatly enlarged spleen and liver, and irregular chronic fever. The case mortality is generally believed to range from 70% to 98% of those attacked. Europeans are not immune. Prior to Leishman's work in 1900 kala-azar was frequently confused with malaria, although under the names of "Burdwan fever" or "Dum-dum fever" it had been recognized for a long period as a separate disease entity in its epidemic manifestations.

Dr. Brahmachari has had at his disposal a large amount of clinical material in his Calcutta wards, and has conducted a painstaking search for a *therapia sterilans magna*. His investigations are not marked by any great originality, following, as they do, the work of Di Cristina, Castellani, Rogers, Plimmer, and others, but they deserve respect for their scope and variety. A large portion of the book is occupied by a comparative discussion of the therapeutic application of a variety of drugs, in the course of which the author expresses his views in no uncertain fashion, particularly with regard to priority of publication. He concludes that antimony is a specific for kala-azar, and that metallic antimony administered intravenously in doses from 0.06 to 0.09 gramme suspended in a mixture of glucose and normal saline, is the best form of curative treatment yet discovered. The conclusion is only partly borne out by the cases which the author records in support, but it is to be hoped that it will be confirmed. Soluble salts of antimony, and a preparation termed "colloidal antimony," are also described as yielding good results. The author appears at times to find the English language all too narrow for the full expression of his meaning, and has a puzzling facility for inventing new words, quite in the Alroth Wright manner. Correction of proofs by some cold-blooded systematist would have somewhat reduced the size of the volume, and would have purged it of such studentesque lapses as "tart" for "tartrate," "sulph" for "sulphate," "Yaw's mixture," "aniline emetic," and "leishmanocide."

THE TREATMENT OF THE DISABLED.

Sir Alfred Keogh, G.C.B., Director-General, Army Medical Service, has dealt with the general arrangements instituted and suggested in Great Britain for the efficient treatment of disabled soldiers.¹ Early after the outbreak of war a committee, under the presidency of Sir George Murray, G.C.B., was appointed for the purpose of considering what methods should be adopted to ensure as far as possible the restoration to health of disabled men and of re-establishing them in suitable employment. This committee found that the duty of caring for sailors and soldiers disabled in the war should be assumed by the State, and should include the restoration of the men's health, where practicable, the provision of training facilities if they desire to learn new trades and the finding of employment for them, when they stand in need of such assistance. It was suggested that these duties should be performed by a Central Committee, either independently or through the agency of the appropriate public department. This committee was appointed, and later a committee of the Board of Agriculture was empowered to deal with the agricultural aspect of the matter. Private individuals had, in the meanwhile, taken steps to deal with some of the more obvious problems with which the Committees had to deal. The author considers that too little attention has been directed to these private endeavours. Notwithstanding the fact that they were rarely organized on a large scale and were not co-ordinated, they were productive of much good.

In 1915 Parliament passed an Act for the establishment of a statutory committee of the Royal Patriotic Fund Corporation, which was to determine all questions of pensions, grants and supplementary grants. The Act further provided for the establishment of local committees. With the establishment of a Pensions Ministry, the pensions problems were settled; by means of a statutory committee an organization for the treatment and the re-education of discharged soldiers was set up.

The pension arrangements are dealt with briefly, and a table is published giving the amounts which are granted for specific injuries. It is pointed out that hospital accommodation, equipment and staffing are being taxed to their utmost, and even if this were not the case, it would be undesirable to retain men who no longer require in-patient treatment, in these institutions. Idleness should not be prolonged. In the existing scheme, discharged soldiers are therefore retained in hospitals as long as in-door treatment is necessary and no longer. During treatment after discharge and re-education, supplementary grants are given.

In turning to the problem of the actual treatment, Sir Alfred Keogh points out that as soon as the disabled man can be discharged from the hospital, arrangements are made for his continued treatment as an out-patient. When it is known that a man will be discharged from the Service, he is visited by a member of the local committee of the area in which the Military Hospital where the man is a patient, is situated. All the relevant facts concerning the man are conveyed by the committee to the committee which is eventually to charge itself with his care, and arrangements are made between these two bodies concerning the special or general treatment he should receive. The whole scheme for his benefit is explained to the man. He is then brought before a medical board and later receives a card on which the particulars of his case, and other information, including the decision of the board concerning his right to a pension, are set out. Copies of the card are sent to the local committee of the area in which the man resides.

The majority of the medical disabilities, excepting epilepsy and tuberculosis, can be cured, but surgical injuries may render a man unfit to carry on his previous occupation, though he may be able to earn a living in civil life. Training or re-education is needed to enable the man to do this. The selection of the employment must depend on the openings which are likely to exist in civil life after the war and on the intelligence and education of the individual. It is therefore necessary for those in charge of this matter to watch the labour market carefully, and to avoid overstocking any particular calling. The author differentiates sharply between curative manual treatment and re-education. The former may be of great value in the ultimate training of the man, but the latter actually begins after the man passes under the care of the local committee. Employers of labour and teachers in technical institutions co-operate in giving the best service to those in need of it. The work in the technical institutions and workshops has been placed under the supervision of a special officer, appointed by the Pensions Minister. When the man resides in a city or large town no difficulty is experienced in placing these facilities at his disposal, but when he lives in country districts, special arrangements are necessary to give him the same advantages as his urban colleague obtains. For this purpose, the Minister provides for these men to be housed in hostels, or lodgings, during the period of their treatment and training.

The tubercular, the epileptic, the neurasthenic, the blind, the dumb and those who have lost a limb require special methods to equip them for employment of a lucrative nature.

The course followed by a wounded or otherwise disabled soldier is somewhat as follows: As soon as he is declared unfit for further military service, he is brought to a first-grade hospital in the United Kingdom for treatment by specially selected physicians and surgeons. During his convalescence he is transferred to an auxiliary hospital. He is then returned to the first-grade hospital, and later is brought before a medical board. This board testifies as to his condition, the origin of his disability, etc., for the information of the Pensions Ministry. He is visited by repre-

¹ Recalled to Life, No. 1, June, 1917.

representatives of the local committee of the area in which the hospital is situated. This committee conveys to the local committee of the area in which he is going to reside, information regarding his condition and circumstances. He receives a card with essential information on his discharge from the hospital. On arrival at his home, he is visited by a representative of the local committee and informed of the arrangements which have been made for his treatment, if any, for his re-education, if required, and for his employment, if necessary. In the meantime he receives a pension, the amount depending on the gravity of his disease or injury. This pension may be supplemented according to the necessities of the case. He may require treatment in an orthopaedic hospital; otherwise he will be looked after by a general practitioner or at a general, civil or military hospital. During the period of out-patient treatment he undergoes the process of re-education if his physical condition permits it. After the treatment is completed, his whole time is available for re-education. The State maintains the maimed soldier in hospital at first and later during the period of out-patient treatment and that of training, and provides him with a pension.

Sir Alfred Keogh proceeds to give a general account of the means employed during the various phases of training, and takes as a basis for this portion of his memorandum the findings of the Inter-Allied Conference, held in Paris, for the study of all matters concerning the disabled soldier. The first heading is "Physical Re-education." To this belongs physical therapy and medical gymnastics, artificial limbs and apparatus and industrial employment as an agent for physical training. The systems employed at the Military Orthopaedic Hospital in London, under the control of Captain Hill, are described in some detail, by the Commanding Officer himself. This institution contains a series of curative workshops. In these workshops the mental attitude of the patients improves as the men gain confidence of their powers. No patient is compelled to work, but inducements are given to them to submit themselves to the beneficial scheme of training. Certain splints are required in the treatment of various deformities. A list of those in use is given. In the next place electrical treatment is extensively employed. The apparatus is simple, and consists of galvanic switch boards and special faradic coils. Metronome interrupters and earthenware tubs for use as baths find a place, as does a condensing discharge apparatus for muscle nerve testing. Diathermy is utilized. A short account is appended of the type of cases which derive benefit from electrical treatment. Over 19,000 separate treatments were given during the course of eight months. In the massage department 870 men have been attended to and discharged, and at the time of the drafting of the report, 280 were under care.

The next problem which is discussed arises out of the attempt to find the best solution for the problems involved under the second heading:—"Professional Re-education." At the Conference it was determined that it would be neither practicable nor desirable to make the re-education compulsory. It has been felt that, provided the men were relieved of all anxiety concerning the maintenance of their dependents during the period of their training, but few would fail to avail themselves of the opportunities offered them to equip themselves for life. More difficulty may be experienced in regard to those who have not grasped this opportunity during the war, but this matter, it was thought, could safely be left to the Ministry of Pensions. Totally incapacitated men are also provided for. The British Red Cross Society has co-operated with the Pensions Ministry and the War Office in providing an organized system of aid to the consumptives, the epileptics and others. The paralyzed have a permanent home in the "Star and Garter" at Richmond, and arrangements are being made by the Society to place them in hospitals near their own homes. Sir Alfred Keogh states that it is improbable that institutional care will be developed extensively, for this system is not popular in Great Britain.

He tells a hopeful, if pathetic, story concerning the after-care of the blind. The establishment of an hostel, called St. Dunstan's, in Regent's Park, by Sir Arthur Pearson, Bart., has practically solved the problem of the blinded

sailors and soldiers. These men are taught "to be blind," to be re-educated and trained. The first phrase is applied by the founder of the institution, who may well be called the blind man's friend, because those who have lost their sight in the war have to be initiated into the best methods of readapting themselves to their new and puzzling conditions. We have already given an account of the training which is carried out in this wonderful haven in these columns. The more intelligent men are taught shorthand writing combined with typewriting, massage and telephone operating. Men who have been trained at St. Dunstan's are now earning on an average over £1 a week, and many are earning more than £2 a week. It must be remembered that this applies to England, and not to parts of Australia, where an unskilled and illiterate coal-lumper can make more than the most highly educated university professor in some of the European countries.

The after-care of the deaf is a problem still to be solved. At present these afflicted men are being dealt with in hospitals. It is stated that approximately 25% owe their disability to gunshot and other injuries. According to Dr. Dundas Grant, 1.4% of all the patients in the military hospitals have suffered from some form of deafness. The number given is 919. Of these 35.7% have been registered as probably incurable. This represents 0.48% of the total number of hospital patients. It is stated that during a period of four months about 2.5% of the 80,000 men of two Germany Army Corps were suffering from disease of or injury to the ear. Deafness without visible injury occurred in 13.56% of the men suffering from ear conditions. In the French Army Professor Moure had approximately 4,500 cases of disease or injury of the ear under his care. An estimate gives 179 men as being incurably deaf.

Both in France and in Germany institutions exist for the auditory and phonatory re-education of these permanently deaf men. Deafness, even if only partial, may form a serious bar to employment in many positions. It is therefore necessary for those in charge of deaf patients to make a careful selection of the trades and callings to which these men can be trained. It appears that in Germany the Ministry of War has established a centre for instruction, but objections are raised to the collection of deaf persons in one place on account of the differences in dialect. For disciplinary reasons the deaf soldier is aggregated in general depôts in various districts, preferably in university towns, where expert teachers of deaf mutes are to be found. At times the co-operation of trained teachers and medical practitioners is sought. Only a few pupils may be taught at one time, and great patience is necessary to obtain good results. A system of teaching the pupils to recognize the lip-picture at first of simple words and to associate it with the written word-picture is employed. Enthusiasm and keenness must be stimulated, and when awakened must not be allowed to dissipate. The success of the scheme will depend on the power of the teacher to enlist the patient's intellectual capabilities in the struggle. The results are not always brilliant, and disappointment should be avoided by a recognition of this fact.

The last chapter of Sir Alfred Keogh's memorandum has to do with the provision of artificial limbs. He calls attention that peace conditions had almost eliminated amputations from surgery, and consequently the industry of supplying artificial limbs had stagnated before the outbreak of war. The problem received the attention it deserved at the hands of Sir George Murray's Committee. Men who have lost limbs are cared for at Roehampton, and a committee composed of eminent mechanical engineers and surgeons who have devoted special attention to orthopaedic appliances, has been set up. Progress has been continuous. Some of the improvements have been suggested by the patients themselves, and experience is lending its aid. On the whole, apparatus of complexity have given less satisfaction than those of simplicity. Finally, mention is made of the fine art exercised by Lieutenant Derwent Wood, of the No. 3 General Hospital, London, in the repair of severe disfigurements of the face. This sculptor and modeller has shown much ingenuity and skill, and has brought very obvious relief to the sufferers.

The Medical Journal of Australia.

SATURDAY, SEPTEMBER 29, 1917.

The Value of Anticipation.

The last overseas mail carried into Australia the *British Medical Journal* of August 4, 1917, with a record of the Annual Representative Meeting which was held in London during the last days of July. Members of the British Medical Association in Australia should read this account carefully, for it contains matter of great concern to all. The debates throw light on the working of the Central Medical War Committee and of the Committee of Reference and on the great problem of the organization of the whole medical profession for war purposes. More recently news has reached the Commonwealth of the enrolment of all citizens in Great Britain for national service. In Great Britain professional bodies have the onerous task of selecting civilian doctors for the army and of safeguarding the civil population and the medical profession. The sequel of the ill-timed action of the War Office in April of this year, when an order was issued calling up all medical practitioners under 41 years of age for military service without reference to these bodies, is also told. It is a matter of moment to the medical profession throughout the Empire that a dignified and prompt protest against this action by the professional committees concerned, should have resulted in a withdrawal of the order.

The events passing in Great Britain should be considered side by side with those in New Zealand, where conscription is also in force, and where the medical profession has demanded mobilization for military and civil purposes. In the Dominion the conditions of country practice probably approximate those obtaining in Australia more closely than do the conditions in Great Britain. For this reason, and also because New Zealand and Australia have this in common, that both are parts of the British Empire, but suffer at present by being far from the seat of war, it will be well if we, in the Commonwealth, watch these passing events and take the lessons to be learned to

heart. We do not know when the people in the Commonwealth will be compelled to accept the principle of conscription. Notwithstanding the opposition of that section of the community which seeks to bring discredit to the name by Australia by creating discord and industrial unrest, when unity and self-sacrifice are essential, there are signs of a pending change. Already a large majority of the doctors have declared themselves in favour of compulsory service to be applied to the members of the medical profession. With these and many other indications that Australia may yet retrieve her good name, the medical profession should take active steps to prepare for all eventualities. The difficulty experienced at present in obtaining a sufficient number of medical practitioners to carry on the work of civil practice will probably not be met by any system of voluntary organization. At Broken Hill the staff of the hospital is reduced to one man; the excellent Medical Superintendent, Dr. M. Birks. All endeavours to secure the services of a permanent assistant medical officer have failed. A fortnight ago we published an advertisement for a medical officer for Camooweal, in North Queensland, on the borders of the Northern Territory. This district is now unprovided as far as medical attendance is concerned, and the management of the hospital is in dire straits. Scores of districts could be named where the work is being carried out with extreme difficulty on account of an insufficiency of doctors. The Federal Committee of the British Medical Association in Australia advocated the establishment of medical war committees on a voluntary basis. This step would no doubt effect a satisfactory arrangement in some districts and overcome a few of the difficulties, but it would necessarily fail to achieve all that is needed. No measure short of a compulsory enrolment for enlistment of the medical profession and consequent mobilization of the profession for military and civil service can be relied on to satisfy all the requirements of the present situation.

THE PREVENTION OF VENEREAL DISEASES.

The Federal Committee considered at its meeting in April of this year the advisability of recommending a public campaign of instruction on the means for the prevention of venereal infections. After some

discussion, in the course of which divergent views were expressed, the Committee determined to ask the six Branches in Australia "whether precautions for the prevention of venereal diseases which should be taken by those who had exposed themselves to the risk of infection, should be made more widely known." The resolution was drafted by General Fetherston, who, as the officer responsible for the medical care and health of the troops of the Australian Imperial Force leaving these shores, naturally regards with favour those means which are held to be essential and which have given excellent results when applied by competent and keen medical officers in the Army. The wording suggests a doctrine to which some of the members of the Federal Committee would not subscribe. It will be noted that "precautions which should be taken" are spoken of. Furthermore, these precautions are stated to be for the prevention of venereal diseases. This question has been discussed by the members of the Victorian Branch, and the motion of General Fetherston was withdrawn after a short but outspoken debate.

Elie Metchnikoff advocated many years ago the inunction of a 33% calomel ointment as a prophylactic against syphilitic infection. Thorough cleansing and urethral injections have been recommended as preventives against infection by the gonococcus. Hygienists are of one accord that it is better to prevent the attack of an infective process than to attempt to control it by treatment, isolation and other means. The duty of the public health authority is to trace the source of infection in the case of notified diseases, and to take all the available steps to eliminate these sources. This duty is undertaken more in the interests of the community as a whole than in the interests of the individual who may become infected in the future. It is held by many that the case of venereal disease should be considered apart from all other infective diseases, because infection, as a rule, is the result of a deliberate act on the part of men and women. There is one argument to which no satisfactory reply has yet been given by those who object to the adoption of prophylactic measures against these infections. It is that many innocent children and wives are infected by infected people. Hygiene will therefore be compelled to give serious consideration to the measures which may be adopted with the object

of preventing these infections, unless other means can be devised to safeguard the innocent and to raise the standard of health of the whole community. The medical profession is at present lending its aid in the majority of the States in Australia to a systematic endeavour to control venereal disease by notification, punishment of a person who knowingly infects another, and insistence on efficient treatment until a cure is effected in every case of detected infection. The objection that the application of preventive measures would be tantamount to a condoning of vice would be invalid, if these measures were the only means of protecting innocent victims. Moreover, hygiene necessarily aims at the eradication of these pests for the purpose of improving the general health of the community. Few believe that any human intervention will succeed in diminishing illicit sexual intercourse. The history of our own times reveals that all endeavour in this direction has been of no avail, and that more infection exists to-day than ever before. This method of attacking the problem would be far preferable to all others, were it but practicable. On the other hand, it must be admitted that the universal employment of so-called preventive means, unless under skilled control, which is not available, would not diminish infection materially, and might even increase the incidence of disease. Under these circumstances we venture to suggest that the experiment included in the recent legislation should be given a fair trial before this highly speculative proposal be advocated. In any case we should not be justified in declaring in public that persons who have exposed themselves to infection should take certain precautions, and that these precautions are necessarily efficacious.

COMPLEMENT FIXATION.

The phenomenon of complement fixation, as seen in the Bordet-Gengou experiment, has been studied from the immunological point of view, and is explained in general terms as a specific antigen-antibody complex, claiming the complement for itself, so that when a hæmolytic system is added, the amount of complement available is insufficient for the solution of the red corpuscles. The physico-chemical nature of the reaction has attracted much attention, and various characters have been noted, without any definite conclusion having been reached. There is reason for assuming that the antigen-antibody reaction is governed by the same laws as those which determine the deflection of complement from one system to another. Hitherto,

all attempts to find an adequate explanation for the complement fixation in the reaction devised by Wassermann has failed, since it has been shown that the syphilitic antigen can be replaced by a non-specific lipid. In the Bordet-Gengou phenomenon the essentials are an antigen-antibody system and a hæmolytic system, with sufficient complement to satisfy one or the other. There is therefore a fundamental difference between the syphilitic reaction and this phenomenon. R. M. Walker has sought to overcome the difficulty in explaining the Wassermann reaction by assuming that it is governed by the laws of colloids.¹ He sets out to demonstrate the probability that the "antigen" and the antibody are colloids. The lipid solution certainly behaves like a colloid of the nature of the suspensoids, which are flocculated by the action of electrolytes; this flocculation takes the form of "gel" production. It is evident that the author is on less secure ground when he attempts to establish the colloid nature of the antibody. He admits the teaching that antibody is attached to the globulin fraction, but that takes him no nearer the solution he is seeking. The view of Wassermann that antibody is of a proteid nature, and that of McDonagh that it is either of lipid or protein-lipoid nature, are too speculative to be accepted without further evidence. His contention that as antibody is not dializable, it must belong to the emulsoid class of colloids is mere guess-work.

Turning to the deflection of complement, he examines the phenomenon from the view of selective adsorption, and adduces some interesting evidence in support of this view. In the first place, if part of the complement be added to the syphilitic system and incubated for 1½ hours, after which time the remainder is added, the mixture contains sufficient unbound complement to dissolve red cells. Inactivated guinea-pig's serum, inactivated rabbit's serum, and solution of white of egg also suffice to satisfy the antigen-antibody system, so that no further complement can be bound. This certainly suggests the phenomenon of adsorption. In the next place, he demonstrates by means of a curve that the amount of complement adsorbed increases absolutely and not relatively to the amount of complex present. He has thus made out a good case that the reaction between the antigen-antibody complex, which is partially, if not completely, of a colloidal nature, and the complement can be explained as a selective adsorption, which does not come into play when normal serum instead of a syphilitic serum is used.

KALA-AZAR.

In his Presidential Address to the Asiatic Society of Bengal, Sir Leonard Rogers, F.R.S., related the story of twenty years' investigation of kala-azar or "black fever." This disease is regarded as the most terrible scourge occurring in India, on account of its high mortality and the painfully lingering nature of the malady. The disease is characterized by attacks of remittent fever, accompanied by swelling of the spleen. After a number of attacks the patient becomes anæmic and the subject of continuous inter-

mittent fever. The skin darkens in colour, accounting for the name of the illness. In the last twenty-five years the disease has traversed the province of Assam, where it caused a high death-rate. In some districts a third of the population died. The natives supposed the disease to be infectious, but medical opinion did not agree with this idea, as the condition was thought to be malarial.

When Sir Leonard Rogers commenced his study of this disease in Assam, he soon satisfied himself that the disease spread from the healthy to those in the same house. He was led by this fact to combat the disease on tea plantations by building new compounds to house the coolies. Although only a few hundred yards separated the new compounds from the old, the coolies brought from unaffected districts and lodged in the new lines, did not contract the disease, while in the old compounds 16% of the new coolies had died within two years. Eighteen years' experience has confirmed the fact that the disease is only contracted by those living in houses already harbouring diseased persons. When the disease started to spread up the valley of the Brahmaputra, steps were taken to prevent infected persons from travelling to other districts and to remove healthy persons to other villages. While these measures limited the distribution of kala-azar, they did not affect the diseased, of whom 90% died.

In 1903 Sir William Leishman found minute bodies in the spleen of a soldier who died in England of fever contracted in India. Leishman suggested that these bodies were degenerated trypanosomes. Donovan, of Madras, at once stated that he had noticed these bodies which could be found in the material withdrawn by splenic puncture from living patients. The presence of these bodies in the spleen of patients suffering from kala-azar in Assam, was noted by Rogers and by Bentley. They were also found in patients suffering from so-called malarial cachexia in Lower Bengal. In 1904 Sir Leonard Rogers cultivated the parasite, and saw it develop into a long, flagellated organism. Further study showed this parasite to belong to the group *Herpetomona*, allied to *Trypanosoma*. This discovery gave a clue to the nature of the life-history of the parasite, since similar protozoa were already known to occur in the digestive canals of certain flies. An examination of the conditions in coolie lines led Rogers to conclude that bed-bugs served as the intermediate host for the parasite. A little later, Patton observed the development of the flagellate stage in the alimentary canal of bed-bugs fed upon blood from patients suffering from kala-azar. This observation has since been confirmed. Owing to the fatal nature of the malady, the proof by experimental means that the infected bed-bug transmits the disease by biting a healthy person cannot be obtained.

Once the nature of the disease was known, the discovery of a suitable parasiticide was only a question of time. Sir Leonard Rogers tried salts of antimony with some success. Others in Africa noted similar happy results. Recently in Calcutta a series of twenty-five consecutive cases were treated with tartar emetic by intravenous injection, with complete recovery in every patient. The prevention and cure of this lethal disease have thus been assured by twenty years of scientific research.

¹ The Journal of Pathology and Bacteriology, XXI., No. 2, April, 1917.

Abstracts from Current Medical Literature.

PATHOLOGY.

(108) Pollens Inciting Hay-Fever.

W. Scheppegegrell describes a method of detecting the pollen grains floating in the air, and enumerates the features serving to identify those grains of pollen which give rise to hay-fever (*Boston Med. Surg. Journ.*, July 12, 1917). He points out that a knowledge of the kinds of pollen grains inciting attacks of hay-fever is needful for prophylactic and therapeutic measures. He contends that the customary test of applying extracts of various pollens to the skin or conjunctival sac is not correct, as the question to be decided is not whether the patient is sensitive to particular pollens, but whether the patient reacts to the pollens present in the air inhaled. The author has found many persons susceptible to the Western mugwort, *Artemisia heterophylla*, in Eastern America, though the plant grows only in the Pacific States. Again, he has noted in California that patients react to the proteins from the common rag-weed, *Ambrosia elatior*, though this plant has never been found in California. The reactions of the patient should be examined in the light of an acquaintance with the pollens present in the air to which the patient is exposed. The author uses ordinary glass microscopic slides, and coats a square inch of the centre with a uniform layer of glycerine. Where the air is humid he uses boiled linseed oil instead of glycerine. The plates are exposed to the air for 24 hours. A drop of Lugol's iodine solution is placed on the slide, which is covered with a thin slip. The specimen is examined with the aid of a mechanical stage. The number of each kind of pollen grains on a square centimetre is counted. The pollens of grasses stain deep blue with iodine, pollens of the family *Ambrosiaceae* stain brown and possess spicules, the pollens from the genus *Artemisia* are three-lobed, and the pollens of amaranths, chenopods and docks are smooth, and contain a little starch. The examination is easy, since the pollens which incite hay-fever are so numerous. The number deposited on a square centimetre in 24 hours is roughly the number contained in a kilolitre of air. Twenty-five pollen grains in a kilolitre of air will cause attacks in most susceptible persons, and the attacks will be severe if 100 grains are present in the same amount of air. The author finds that only the pollens of wind-pollinated plants excite the disease. Plants with showy colour and strong odours do not cause the disease, although the pollens are often toxic when tested by skin reactions. A patient may react to grass pollens and not to rag-weed pollen, or vice versa. The pollen of some species is more active in bringing on attacks than that of other plants. The

pollen from the docks, water hems, careless weeds and goose-foot are only active when present in large numbers in the atmosphere. The author has found it possible to reduce the pollens inciting hay-fever to those of four groups, the members of which are similar in structure, though they vary in size. The rag-weed group includes the genera, *Ambrosia*, *Gaertneria*, *Ivas*, and *Xanthium*. They all possess spicules and stain brown with iodine. The grass pollens stain intense blue, and are large and spherical. The relatively small grains cause most of the disease due to grass pollen, e.g., from *Capriola dactylon*, *Poa annua*, *Chaetola glauca*, *Paspalum dilatatum* and *Panicum crus galli*. The species of *Artemisia* or wormwood have trilobed pollen. The author shows reproductions of photomicrographs of different pollens. He is of opinion that the biological examination of the atmosphere should precede the application of sensitivity tests to the patients.

(109) Spirochaetes in Fæces.

H. F. Carter has examined the fæces of 554 patients suffering from dysentery for the presence of spirochaetes, and has compared the results with those obtained by microscopical examination of the stools of 100 healthy persons (*Annals Trop. Med. and Parasit.*, February, 1917). The examination was carried out on the material used for the examination of the fæces of dysenteric patients at Liverpool, England, for the presence of protozoa (see *Med. Journ. of Australia*, May 19, 1917). The spirochaetes were considered to be *Spirochaeta eurygyrata* in all cases. Spirochaetes were found in 313 out of the 554 patients, or in 56.5%. This figure represents the minimal percentage of infections. In the healthy the spirochaetes were found in 41 out of 100 persons. It is not possible to compare these figures, as the dysenteric patients were examined a greater number of times. In some cases five examinations were made. In the healthy 81 patients were examined once, 17 twice and two thrice. Out of the 19 patients examined more than once, eight were found to harbour spirochaetes at the second or third examination. Of the 554 patients, 51 harboured *Entamoeba histolytica* and 23 of these showed spirochaetes, 123 harboured *Entamoeba coli* and 67 of these showed spirochaetes, and 116 harboured *Giardia intestinalis* and 57 showed spirochaetes. The protozoal and spirochaetal infections do not therefore appear to be related.

(110) Phosphatic Urinary Calculi in Rats.

T. B. Osborne, L. B. Mendel and E. L. Ferry observed during their experiments on the nutrition of rats that a number of those that died exhibited phosphatic calculi in the kidneys or in the urinary bladder (*Journ. Amer. Med. Association*, July 7, 1917). The stones varied from one to over a hundred in number, and from particles no larger than the head of a pin to calculi filling the whole bladder in size. Such calculi were never observed at autopsies

on the rats of the stock. When the diets of the rats developing calculi were examined, it was observed that stones only appeared in rats fed for long periods on rations without an adequate supply of fat-soluble vitamins. Calculi were found in 81 out of 857 rats which died of malnutrition. In 35 rats no butter or other source of fat-soluble vitamins was given, although sufficient protein, fat and carbohydrate to supply an ample diet was fed to the rats. In the remaining 46 rats which developed calculi, none received food known to contain fat-soluble vitamins during the entire course of the experiment. In 13 rats only the fat-soluble vitamins were present for one-half the period of experimental feeding. The total weight of the stones sometimes exceeded 5 gm. The stones consisted of calcium and magnesium phosphates, together with some carbonate. Uric acid and oxalate of lime were absent. A small quantity of organic matter was present in the form of mucin. The author believed that the calculi arose from infection of the urinary system with ammoniacal decomposition of the urine. The lowered nutrition permitted the microbes to invade the urinary tract. Signs of inflammation of the bladder were usually noted at the post-mortem examinations.

(111) Experimental Typhoid Septicæmia.

L. Fèvre de Arrie (*C.R. Soc. Biol. Paris*, January, 1917) has studied the effect of the addition of bile in assisting the pathogenic action of *Bacillus typhosus*. Four series of experiments have been made on guinea-pigs. In the first group, broth cultures of typhoid bacilli were given subcutaneously to guinea-pigs weighing 400 grammes. None of the animals died. In the second group the guinea-pigs were inoculated with cultures on ox bile. The animals died rapidly, with lowered temperatures. The microbes were recovered from the blood of the heart. In the third group, the guinea-pigs received two separate injections, one of sterile broth and the other of a culture in ox bile. These animals died as soon as those of group two. In the fourth group the guinea-pigs were given a broth culture and some ox bile by separate injections. These animals died most rapidly. By varying the dose of typhoid bacilli, the time that the animal lived could be altered from one to three days. With doses less than 2 c.cm. the animals survived.

In a second communication (*C.R. Soc. Biol. Paris*, February 3, 1917) the same author relates his experiences with bile salts instead of bile. He finds that the addition of glycocholate or taurocholate of soda to the broth on which the typhoid bacilli are grown, leads to cultures which are not lethal to guinea-pigs. If, however, the salts are added to broth cultures immediately before inoculation, the guinea-pigs die. If the salts are injected at the same time as the cultures separately into guinea-pigs, these animals die. The taurocholate appears some-

what more powerful than the glycocholate in assisting the action of the *Bacillus typhosus*.

PEDIATRICS.

(112) Institutional Care of Infants.

It has been the custom of late years to make a wholesale condemnation of infant asylums and to recommend in their stead the "boarding-out" system. Brady (*Arch. of Pediatrics*, May, 1917) protests strongly against this condemnation, and considers that the mortality amongst asylum infants can be kept as low as that occurring in children cared for in private houses, if due attention be paid to the nursing and feeding of the infants and to their surroundings. In support of this view, he quotes his experiences in an infant asylum attached to a large maternity hospital for a period of twelve years. The majority of the infants were born in the institution, and all were artificially fed, and though the hygienic surroundings were not ideal, yet they were not bad. The asylum was a training school for nursery maids under skilled staff nurses. A milk laboratory was attached to the building. Children stayed in the rather over-crowded wards up till the age of two years, and were then transferred to "run abouts." The author found that the asylum infant during the first five months was slow to gain in weight, but considers that this occurs also in artificially fed infants in private homes. Subsequently, however, with the addition of well-cooked cereal to the diet, the weight curve ascended sharply. His clinical experience, extending over a protracted period, showed that the nutrition of a young infant was markedly improved by the addition to the diet of a cereal cooked over night and then strained. The infants were taught at two months to take gruel from a spoon, and the amount taken was increased each week. The absence of starch "injury" was due, no doubt, to the liberal administration of cow protein and cow fat in addition. Two standard milk mixtures only were used, both containing starch, the milk being acidified with lactic acid bacilli twelve hours before mixing. In his summary, the author states that the appalling mortality in infant asylums is entirely unnecessary. The putting into practice in these institutions of the numerous additions to our knowledge in the proper way of nourishing these infants proves that the institution itself is not the root of the evil. Infants can be successfully taken care of in an asylum, but it is necessary that the old-time methods of feeding be discarded. Feeding problems and digestive disturbances are not the main sources of worry; but the great trouble is to cope with infections of the respiratory system.

(113) The von Pirquet Test.

Out of a total of 324 necropsies performed on infants and children from birth to 12 years of age (hospital cases), 86 were found to have tuber-

culous lesions, i.e., about 20%, while 256 were found to be free from the disease. Knox (*Amer. Journ. of Dis. of Children*, July, 1917) made an investigation of those in which the von Pirquet test had been made as a routine measure. Koch's old tuberculin, undiluted, was used, and the scarification made by von Pirquet's special borer. Readings were made in 24 and 48 hours. Of the 256 cases having no tuberculous lesions at necropsy, the test was made in 172 instances, and was never positive. Four of these cases were originally thought to be positive, but in three instances a second confirmative test was negative, and the fourth gave a possible tuberculous condition as a causal factor, to wit, a patch of fibrous pleurisy. Of the 68 cases in which tuberculous lesions were found at necropsy, the von Pirquet test was made in 61; of these, 45 gave a positive result and 16 a negative. On analysis, 12 of these 16 negative reactions were found to occur in patients suffering from rapidly advancing, widespread, miliary tuberculosis; two in patients with tuberculous meningitis; two in patients with advanced pulmonary phthisis with cavity formation, and one with tuberculous peritonitis. In all instances the test had been made from a week to a few days before death, usually several weeks after the onset of the illness. The author emphasizes the necessity of repeating the test in all doubtful cases. Only those giving a marked contrast between the test and the control site should be called positive. He concludes that a positive cutaneous test invariably indicates the presence of a tuberculous lesion in the body in children, and that a persistently negative reaction establishes the fact that there is no tuberculous focus present, except in those extremely ill patients, where the presence of tuberculosis can be readily established by physical examination.

(114) Epidemiology of Bacillary Dysentery.

Smillie (*Amer. Journ. of Dis. of Children*, April, 1917) has made a study of the mode of transmission of bacillary dysentery in infants and the source of the infection, in a number of hospital patients admitted with the disease. As these were usually infants under 18 months, it was found to be comparatively easy to trace the infection, since children of this age come in contact with few people, travel but little, and eat of one, or, at most, a few, articles of food. No case was reported as positive without showing two at least of three positive factors, to wit: (1) A definite clinical history; (2) The presence of the dysentery bacillus in the stools; (3) The development of specific agglutinin in the blood. The following established facts about the disease were depended on for diagnosis: (1) The disease is due to the dysentery bacillus, which is readily recognizable; (2) The bacillus is found in the faeces only, and not in the other excretions. Every case thus repre-

sents a short path between the infected faeces and the mouth of the victim; (3) The incubation period of the disease, at least in adult cases, is short (3-7 days); (4) In infants the disease is usually a summer one. In all 75 cases were thoroughly investigated, 49 being hospital cases. The author's conclusions are: (1) Bacillary dysentery is a readily communicable disease which may be spread in a community by means of contact with an acute case or a carrier, by means of food as milk, condensed milk and ice cream, by water and by flies; (2) The sporadic summer bacillary dysentery of infants may be transmitted to older children or to adults. Though the disease is severe in the infant, it is usually mild in the older patients. As a general rule, the older the child the milder the disease; (3) The dysentery bacilli from the stool of an adult with a mild attack of dysentery may produce a rapidly fatal dysentery in infants. Thus the menace of the mild adult case to the community is considerable; (4) Bacillary dysentery is rarely found in a nursing baby; (5) Hospital contact cases are not uncommon. The disease is very readily transmissible by direct contact, and no one has a right to admit patients with dysentery into a hospital, unless provision for their isolation can be made.

(115) Ringworm of the Scalp and Contacts.

As with the infectious fevers, the best method of preventing the spread of scalp ringworm in schools lies in early recognition of the disease, notification and quarantine. One of the leading principles in the prevention of infectious disease is the examination of contacts, and it is wasteful to expend time and trouble in treating ringworm when a source of reinfection exists at home. Owing to the excessive incidence of scalp ringworm in children admitted to school infants' departments, Hutt (*School Hygiene*, November, 1916) was led to institute an examination of as many contacts as possible. This he was able to do, acting on information received from the school clinic at which the patient attended for treatment or from the school nurse detailed to pay a special visit to the parent. The contacts attending school were examined by the nurse, and suspicious hairs removed for microscopic examination, and children below school age were similarly examined at their homes. Out of 275 contacts, no less than 48 were affected with ringworm of the scalp, i.e., one out of every six children living under the same roof as a sufferer caught the disease. As might be expected, the probabilities of acquiring the disease were less when the child lived in the same house but did not belong to the same family. Eleven of the 40 children affected were below the school age. The advantages of early recognition of the disease rested in the probability of an early cure and a corresponding diminution in the period of infectivity.

British Medical Association News.

MEDICO-POLITICAL.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on September 5, 1917, Professor R. J. A. Berry, the President, in the chair.

General R. H. J. Fetherston opened a discussion on the following resolution referred by the Federal Committee to the Branches:—

That it be a recommendation to the Branches to consider whether precautions for the prevention of Venereal Diseases which should be taken by those who have exposed themselves to the risk of infection, should be made more widely known.

He explained that when the Federal Committee were considering a report drawn up by the Departmental Committee on the Causes of Death and Invalidity in the Commonwealth, with regard to venereal diseases, it was noted that it was a question for the State Government to consider whether it should not be advocated that those who had exposed themselves to infection, should take precautions to prevent venereal disease. The matter was not adopted by the Federal Committee, but had been sent on to all Branches. He said that it was a well-known fact that in London and elsewhere it was proved that there was considerable merit in the various forms of preventive treatment, particularly those of washing, cleansing, and smearing with 20% calomel ointment. As a result, in England venereal disease had been diminished greatly. Where such precautions had been taken in Australia by enthusiastic and energetic medical officers good results had followed. At one camp near the slums in Sydney, where venereal disease was very bad, one officer, an old man, had taken great interest in his men and saw that they used these preventive measures, and he never had a case of venereal disease in his camp. In the other camps around the men were coming out two and three a day.

It was the duty of the medical profession to make these things public. The arguments on the other side was that the imparting of such information would be more or less an encouragement of vice, but the profession had nothing to do with that. The risks were taken, and it was the duty of medical men to tell the public in what way they could minimize the risk of becoming infected. He moved:—

That this meeting is of opinion that the precautions to be taken by those who have exposed themselves to the risk of venereal infection, should be made more widely known.

This was seconded by Dr. K. Hiller.

Dr. F. L. Davies contended that it was the duty of the profession to consider whether the promulgation of information would be an encouragement of vice. When "606" was introduced, it was held up as a cure for those acquiring syphilis, and it gave a cloak to those who were otherwise afraid of running the risk that there was no risk to be run. In this way the infection was increased. In his belief, the carrying out of such a resolution would encourage those persons, who, solely from fear of risk, were avoiding infection, to take the risk because means were provided for avoiding such infection. For that reason he would vote against the motion.

Dr. A. N. McArthur said that when the American fleet went on two or three years' journey some time ago, a method of prevention was introduced, that in its final result was absolutely dramatic in preventing venereal disease throughout the navy. The method was adopted with the knowledge of the naval office entirely. The American public knew nothing of it. There was recognized the danger of making it public, for there would be an outcry among the people and among the directors of religion, who would contend that vice was being licensed by a large and prominent body. At the Presbyterian Assembly at Geelong he had brought this matter prominently forward, and it was extraordinary to hear the violent opinions against any such knowledge being introduced to the public in a universal sort of way. One had to remember that there would be a big outcry of church people if vice was going to be made a little easier. It was the duty of the profession to do something to prevent the infection in the population,

and yet it was forbidden to do it in the case of venereal disease. The matter was on a different footing where discipline could be exercised in such a body as the navy and army, but a population could not be ordered in such a way. However, on the question of broad fact he supported the motion to reduce the possibility of infection, but he felt that the matter of issuing the information broadcast to the civilian population was worthy of grave consideration.

Mr. G. A. Syme thought the consideration of the matter should be deferred for some time, and in the meanwhile statistics should be collated of the effect of disseminating knowledge of this kind among our troops in Egypt. In Egypt it was arranged that Major (now Colonel) J. W. Barrett should visit all transports on arrival and carefully instruct the men in the prevention of venereal disease. That was done, and as everyone knew the zeal with which Major Barrett entered into anything he undertook, they could assume that this work was done thoroughly. When the Venereal Camp was established close to the 1st General Hospital and Major Jackson placed in charge, he collated statistics and it was found that numbers of men who were admitted there had used preventive measures. So far the figures have never been published, but Major Jackson had informed the speaker that the result, to his mind, was appalling. Instead of diminishing infection, it had increased the trouble. The men acted on the assurance they received that they were safe, and therefore indulged very freely, and, as a matter of fact, it proved that they were not safe. As Dr. McArthur had stated, measures that might be good for the army and navy, were not satisfactory for the civilian population. It was not clear how preventive measures could be supervised by authority in the case of a civilian population. Apart from questions of a religious or moral aspect, from a purely medical aspect, where information was sent out to prevent disease, if such instructions were not properly carried out, it would only increase the disease. The question, to his mind, was whether the promulgation of knowledge of this kind would have the desired effect unless it were carried out efficiently. He felt that it was a little too soon to push this matter on.

Dr. T. W. Sinclair said that means of prevention of this character had been in existence in the naval and military service, and there seemed to be good grounds for satisfaction, but there the men were under control. In the case of the American navy, the men on return to their ship had to report at the sick bay if they had exposed themselves to infection. If a man had not reported himself, and should develop the disease later on, he would then be liable to disciplinary treatment. Such discipline would not be possible in the civilian population. The authorities had stated that a large percentage of venereal disease was contracted whilst men were under the influence of drink, and the chance of the ordinary civilian under this condition using preventive treatment was almost nil. From a moral standpoint great objection would be raised in the minds of lay people that the medical profession were encouraging men to expose themselves to venereal disease without risk. Further, it was not entirely without risk, even if these precautions were made use of. Although they might be recommended, the possibility of infection was still there. Therefore, prevention could not be considered complete. He felt that it was rather early to pass such a resolution.

Dr. J. Booth said that certain medical practitioners had been hauled over the coals for advocating this same measure when a certain play was brought before the public. He entirely disagreed with General Fetherston's contentions. It was impossible to dissociate the moral question from the medical question. The results had been excellent wherever preventive treatment had been carried out. He would like to point out that the regulation that was enforced with regard to the American fleet had been abrogated by the present Minister for the Navy. If they passed a resolution of this nature, he was afraid they would be "falling from their high estate" as teachers of the public. The public looked to the medical men as teachers, and if they passed this resolution, they would be saying to the people that it was not an ethical question, and later the public would be asking them to take steps which would render them liable for criminal abortion. Without entering into the question of whether it was a crime for anyone to put himself in the way of prostitution, society did condemn

it (and some medical practitioners thought that society was right in that attitude); and society would not think it right to advocate means in what they think to be wrong doing. More good would be done if the profession would advocate continence. Syphilis and gonorrhoea, for the man as for the woman, were industrial diseases, and if they took steps to stop the prevention of these diseases, they should go further and stop prostitution, and then where would the profession be landed? As this motion would tend to glut the appetite rather than control it, he could not support it.

As the time had come for other business on the paper, General Fetherston, with the consent of his seconder, withdrew the motion.

John Richard Lloyd Jones, L.R.C.P., Edin., 1890; L.R.C.S., Edin., 1890; L.F.P.S., Glasg., 1890, of Bundarra, New South Wales, and William Robert Thrower, L.R.C.P., Edin., 1892; L.R.C.S., Edin., 1892; L.F.P.S., Glasg., 1892, have been nominated for election as members of the New South Wales Branch.

The following were elected members of the New South Wales Branch on September 18, 1917:—

Clarence C. Hains, M.B., Ch.M., Royal Prince Alfred Hospital, Sydney.

W. B. Curguven, M.R.C.S., Eng., 1890; L.R.C.P., Lond., 1890, Paddington, Sydney.

Naval and Military.

The 339th list of casualties, which was issued on September 21, 1917, contains 1,014 names. The number of deaths recorded is 521, while 238 officers and men have been wounded, 12 men are missing, 28 have been injured, and 21 are prisoners of war. Twelve officers and 166 men are ill in hospital. Major Thomas Frederick Brown is reported seriously ill, and Captain James Dawson and Captain Percy Alexander Morris are reported to be ill.

In the *London Gazette* of July 18, 1917, it is announced that Captain George Seaborne Robinson, M.C., Australian Army Medical Corps, has been awarded the Bar to the Military Cross. He displayed great courage and determination in attending wounded under heavy fire. On one occasion he personally led a party out in front of our line for the purpose of searching and attending the wounded not yet collected (Military Cross gazetted June 4, 1917).

THE AUSTRALIAN ARMY MEDICAL CORPS COMFORTS FUND.

We have received four further contributions to the Australian Army Medical Corps Comforts Fund. We are informed that the Depot is badly in need of monetary support for its ordinary work, and that the provision of Christmas Comforts has strained its resources very considerably. We therefore look to our members to assist in replenishing its depleting coffers.

	£	s.	d.
Amount previously acknowledged	58	1	0
Dr. J. R. Robertson (Childers, Q.)	1	1	0
Dr. F. W. Grützner (Shepparton, Vic.) ..	2	2	0
Dr. W. C. McClelland (Newtown, N.S.W.) ..	2	2	0
Dr. Leonard W. Bickle (Burwood, N.S.W.) ..	2	2	0

Corrigendum.

Captain H. Hunter Griffith informs us that, through an oversight, he included the wrong formula for grey oil in his article on "The Clinical Treatment of Syphilis in the Australian Army" (see *The Medical Journal of Australia*, September 8, 1917, page 199). The formula should read as follows:

Recipe:
 Redistilled mercury, 480 grammes
 Lanoline, 960 grammes
 Camphor
 Creosote, ana 480 grammes
 Sweet oil of almond, ad 4,800 grammes
 10 minims = 0.06 gramme (gr. i.) of mercury

Public Health.

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, for the week ending September 8, 1917:—

	Adelaide.		Rest of State.		Totals.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Diphtheria	5	3	31	0	36	3
Pulmonary Tuberculosis	0	4	12	2	12	6
Scarlatina	0	0	7	0	7	0
Favus	0	0	4	0	4	0
Erysipelas	1	0	3	0	4	0
Pertussis	0	0	3	0	3	0
Morbili	0	0	2	0	2	0
Enteric Fever	1	0	1	1	2	1
Puerperal Fever	1	0	0	0	1	0

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, for the week ending September 8, 1917:—

Disease.	Hobart.		Launceston.		Country.		Whole State.	
	Cases.		Cases.		Cases.		Cases.	
Pulmonary Tuberculosis	2	..	0	..	4	..	6	
Diphtheria	2	..	3	..	12	..	17	
Enteric Fever	0	..	0	..	7	..	7	

THE OPTICIANS BILL.

The Opticians Bill was considered in the Legislative Council of Queensland on September 18, 1917, when the Secretary for Mines moved formally that the President leave the chair in order that the Bill could be considered in committee. The Honourable P. J. Leahy moved as an amendment that the Bill be referred to a select committee, and that this committee should have power to take evidence and collect information relative to the whole subject. The honourable member stated that his motion was not intended to have the effect of killing the Bill. There was some opposition to the amendment, but after a short discussion it was put and carried.

Correspondence.

THE MEDICAL PROFESSION AND THE LODGES.

Sir,—I am pleased that you at once corrected the very erroneous impression given by Dr. Huckell that the resignation of contracts with the lodges would be anything of the nature of a strike. It will be sufficient for those who are against us to say that, unlike the present-day striker, we will be prepared to work always, but having resigned our lodge appointments will deal with all as private patients until a new contract is made.

It is the same want of discernment that classes our estimable Richmond member as an agitator. Dr. Rosenberg is doing a great and beneficial work for his fellow-members, and at loss to himself has travelled about to help see this through.

Dr. Huckell suggests two other lines of action, both equally a mistake: arbitration, which is not necessary, and the resignation of public hospital appointments, which has nothing to do with the matter. We are not out to fight the public, but to let certain of them know that our services may be had under certain conditions, namely:—

- (1) A common form of agreement.
- (2) The correction of certain abuses.
- (3) Fixation of pay to £1 a year for city and 26s. a year for country doctors.
- (4) The income-limit clauses.

There is some discussion about this last which the lodges will not recognize at all, but which we must make known to them once and for all as a cardinal principle of lodge practice. I would make this suggestion, though prepared to follow the lead of our Council. Delete the clause about £204 a year and include its terms, making the one figure

in the clause above £312 a year, and add another to the effect that any member of a lodge debarred from medical benefits because of his income being above £312 a year, may make a contract with his doctor to give the usual lodge medical benefit for an amount equal to 1% of his income.

Such a clause would do away with any necessity of excluding present members from the operation of the income-limit clauses, and would make the public see that we are only after a fair thing.

Yours, etc.,

F. E. LANGLEY.

Dandenong, Victoria,
September 17, 1917.

Sir,—It is a pleasure to note that there are others beside myself who object to the proposed strike, for, I presume, the resignation of lodge appointments by the whole of the medical profession of Victoria is a strike run by the leaders of the doctors against their employers connected with the lodges.

I understood that my attitude was "solitary" in opposing the proposed strike, according to the advice of the Melbourne Secretary; but, subsequently, in conversation with other B.M.A. members, I find that the proposed movement is not by any means generally approved.

The position appeals to me as follows: (1) We, as a medical profession, have objected to the recent high-handed action of strike leaders and others in New South Wales, and although we strongly object to strikes amongst others during the course of the war, and consider that possibly some of the strikes have been engineered by German money spent quietly in Australia, yet the medical profession are a special class in the community, and cannot possibly be classed by the public of Australia with all other classes of strikers who have interfered with the good working of our national machinery during the period of the war. It is, however, apparent that the Australian citizen will make no distinction in the medical man's favour, for he will rapidly come to the conclusion that a doctor, by his education and position, should, at a time like the present, regard all professions and industries from a national standpoint. (2) It was generally understood that the consideration of the Model Lodge Agreement was to be deferred until the termination of the war. (3) a referendum should be taken amongst doctors who have, say, more than fifty lodge members on their lists, before any active steps are taken. Specialists and those in private practice should not vote, as a strike would merely work into their hands. My views, as above, were communicated to the British Medical Association some weeks ago.

Yours, etc.,

R. A. PARKER.

"Cottesbrooke," Healesville,
Victoria, September 17, 1917.

Sir,—Dr. Huckell suggests for the future conduct of our negotiations with the Friendly Societies (1) arbitration, (2) secret ballot for a strike involving house surgeons, honoraries to hospitals, lodge surgeons, etc. So far as arbitration is concerned, I have here the printed report of arbitration procedures that were adopted in New South Wales before their fight. Mr. Flowers, the Minister of Health, was arbitrator. Mr. Carl Glasgow, the chief protagonist of the lodges, with four others, met five of the British Medical Association, and the Common Form of Agreement, as it exists now, was adopted unanimously by both sides. Yet, when the five delegates went back to their lodges, not only did the lodges turn the agreement mutually arrived at down, but the five delegates themselves advised them to do so.

Dr. Huckell, with his intimate knowledge of Trades Hall methods, must know that arbitration is effective only when there is a penalty monetary clause in the arbitration rules.

Besides, the five delegates of the Friendly Societies' Association have no executive power from their association, the association has no executive power from their orders, and no order has executive power from its individual lodges; so what is the good of arbitration, when the only executive

power is vested in the five delegates of the B.M.A.? One of the most awkward obstacles in the way of a peaceful settlement is the refusal of the A.O.F. and the M.U.I.O.O.F. to deal with the B.M.A. at all. The B.M.A. is asking for an agreement not nearly as exacting as that in New South Wales; it is not asking for a war increase, despite the fact that the cost of living has increased to us the same 50% as to the wage-earners, nor is it asking for more than what was considered a fair thing in 1913, so that it is difficult to see that there is anything to arbitrate about.

The Council, somewhat slowly, took steps to secure better conditions for us by the only way any executive can proceed; it called a meeting of delegates from all over Victoria. The result was a delight to those of us who were desirous of better things. A resolution was carried insisting on the £1 and the income limit, and directing the Council to go right ahead. It did so, and conferred with the delegates of the lodges. Three ineffectual conferences, spreading over two months, ended in the inevitable deadlock. The delegates of the lodges admitted they had bluffed us in the past; they offered us their final terms of 17s., to come into force in twelve months' time, and would not listen to any income limit at all.

In view of (a) the experience of New South Wales, (b) the lack of responsibility of the arbitration, (c) the expressed determination to give us no material increase, will any person outside of a lunatic asylum say that arbitration is of any use?

(2) Secret ballot and strike. Why is a secret ballot taken among wage-earners preparatory to a strike? It is due to the fact that the minority in an open ballot are subjected to persecution by the majority.

Now, I carefully pointed out at Prahran, where Dr. Huckell was present, that the Council did not intend to proceed unless the profession was unanimous. It was shown that the method of organization was such that a ballot was taken at every stage: (1) delegates meeting, (2) signed undertaking to resign if the Council asked, (3) actual resignation. The resignations will be put in by the Council if the response is satisfactory, and not unless. A printed document was forwarded to every B.M.A. man on July 6, 1917, with the promise that nothing would be done unless we lodge surgeons wanted it. Dr. Huckell was invited, as every man in Victoria was invited, to give us his views at the meeting; but he remained silent, and has been quiescent for two months, never present at a monthly meeting of the B.M.A., till now he breaks forth when the organization is more than beautiful.

He would have a ballot of lodge surgeons only; but, if carried, would have a strike of every doctor in Victoria. If it is a democratic thing to have a ballot at all, surely it is a disgraceful proposal to involve men in a conflict when they have not been consulted.

Surely no more contemptible and hare-brained proposal has yet been put forward than that of Dr. Huckell, to prevent the sick poor from obtaining relief at a hospital because the lodge surgeons are asking for a rise in remuneration from 14s. to 20s. per year. I consider still that my suggestion to treat former lodge patients, while the fight is on, and perhaps afterwards, for £1 a year, is a good plan, for it removes the accusation from us of oppressing the poor lodge patient, as well as providing the lodge members with the needful attention.

The result of the latest action of the Council has been received with a gratifying result that has astonished the weaker vessels, and has shown us that the profession is with the Council. Never in my wildest dreams did I think that the result would have been so unanimous.

We trust that when the resignations are asked for the response will be just as good. Delay in replying to the Council's communications hampers us seriously. "Do it now" is my slogan, for with a quick reply to the Council's instructions, a big money fund, and the determination to stick to the Council, nothing can beat us.

Anent Dr. Huckell's remarks about me; they are characteristic of him, and, as he is well known in Melbourne, I need say nothing more.

Yours, etc.,

D. ROSENBERG.

Richmond, Victoria,
September 24, 1917.

EXAMINATION FOR LIFE INSURANCE.

Sir,—What liability does the medical examiner for a life assurance society incur by recommending the acceptance of an applicant for insurance? In the event of the early and unexpected death of the person from disease, acquired or developing after the insurance has been accepted, has the assurance society any claim on the medical examiner?

Yours, etc.,

Adelaide, September 20, 1917.

"MEMBER B.M.A."

[The relations between a medical referee and an assurance society are governed by the law of contract, and are in every way analogous to those existing between a medical practitioner and his patient. The assurance society selects a medical practitioner to act on its behalf, and the medical practitioner is bound to exercise ordinary care and skill in the examination of the candidate and in the advice he gives to the society. When a proposal is accepted on the advice of the practitioner acting on behalf of the society, and subsequent events show that this advice was bad, the society would have a remedy if it could prove that the practitioner did not exercise ordinary care and skill. The onus of the proof would, of course, lie with the society. It therefore appears that a medical referee who exercises ordinary care and ordinary knowledge in the examination of the proponent, and who advises the society after due consideration of the facts elicited, that the life is a good one, cannot be made liable in the event of death occurring from a disease which either was not detected at the time of the examination, or was then not existent. Assurance societies exercise judgement in the selection of medical referees, as it is obviously important that slight indications of developing pathological conditions should be recognized and correctly assessed, but even when the referee possesses expert knowledge, the law only requires him to exercise ordinary care and skill in carrying out his part of the contract.]

BARCOO ROT.

Sir,—An article by Lieut.-Col. Martin in the June 9 issue of the *British Medical Journal* is the first written statement about the disease that has come under my notice.¹ I must have missed the "veld-sore" articles quoted in the paper. On reading the article I was struck by what seems to me the absence of any effective treatment, as Lieutenant-Colonel Martin seems to rely entirely on local application.

I have had 25 years' experience of treating "barcoo," but when I first saw a case, the very name of the disease was unknown to me; in fact it was from my patient that I heard the name first. As many men are situated as I was, it may be a help to them if I give my experience.

In a very bad case, one of my first, I tried every possible remedy till I came to the hypophosphites. That was the end of experimenting, as the syrup. hypophos. co. (B.P.C.), or better still Fellow's syrup, in 7 c.cm. (2 drachms) doses, cleaned up the ulcers in two to three weeks with absolute certainty, and that without local treatment further than simply protecting the broken surfaces from the flies.

I have treated a great number of cases since, as the disease is universal in the back blocks, and I have never had any need to use any other remedy.

Under local treatment the ulcers will often heal up pretty quickly in a man who has not lived "out back" for very long, but in cases of men like prospectors and others who don't get a change to the coast for many years at a time, this is not the case. In these cases local applications are an absolute failure, perhaps I should say, at my hands at least. You will get one sore to heal up readily, and just alongside there will be two or three fresh sores progressing steadily backwards.

There is another complaint which is, I am sure, closely allied to "barcoo rot," and that is "barcoo spew," or "Belly-ander spew," at least that is the nearest reproduction of the name I can give. This disease I have never seen referred to in print. However, I suppose your space is valuable, and I stop at that.

Yours, etc.,

CHAS. H. HILL, D.M.O.

Laverton, W.A., Sept. 1, 1917.

¹ This article was published in *The Medical Journal of Australia* of August 11, 1917, page 118.

GUARANTEED INCOMES.

Sir,—I have observed in a Victorian daily paper an advertisement inviting applications from doctors to settle in a certain district in that State, and offering a certain yearly guarantee.

If anyone should think of considering the matter, it would be well for him to do nothing in a hurry. He should see beforehand that the guarantee is so arranged that it could be enforced without delay or difficulty, as speaking generally, these medical guarantees are unsatisfactory, owing to the difficulty of enforcement.

A strict inquiry into the financial standing of the guarantors should be made, and, above all things, the guarantee should be a joint and several one, so that if some of the guarantors failed to discharge their obligations there would be others from whom the doctor could obtain the full amount of his guarantee.

Doctors are proverbially very bad business men; if they paid more attention to the business aspect of the profession it would be infinitely better for them.

A matter like the above should be arranged strictly on business lines.

Yours, etc.,

"ONCE BIT, TWICE SHY."

September 17, 1917.

Books Received.

SURGICAL THERAPEUTICS AND OPERATIVE TECHNIQUE, by E. Doyen, English Edition, prepared by the author in collaboration with H. Spencer-Browne, M.B., etc.; 1917. London: Baillière, Tindall & Cox; Volume 1; Large Royal 8vo., pp. 746, with 1,038 illustrations. Price, 25s. net.

THE TREATMENT OF DIABETES MELLITUS, WITH OBSERVATIONS UPON THE DISEASE BASED ON THIRTEEN HUNDRED CASES, by Elliott P. Joslin, M.D., M.A.; 1917. Philadelphia: Lea & Febiger; Second Edition, enlarged and thoroughly revised; Royal 8vo., pp. 659, with illustrations. Price, \$4.50.

MALINGERING AND FEIGNED SICKNESS, WITH NOTES ON THE WORKMEN'S COMPENSATION ACT, 1906, AND COMPENSATION FOR INJURY, INCLUDING THE LEADING CASES THEREON, by Sir John Collicle, M.D., etc.; 1917. London: Edward Arnold; Demy 8vo., pp. 664. Price, 16s. net.

MESSAGE: ITS PRINCIPLES AND PRACTICE, by James B. Menuell, M.A., M.D., etc., with an Introduction by Sir Robert Jones, F.R.C.S.; 1917. London: J. & A. Churchill; Royal 8vo., pp. 342, with 125 illustrations and an Appendix.

Proceedings of the Australasian Medical Boards.

NEW SOUTH WALES.

The following have been registered under the provisions of "The Medical Act, 1912 and 1915," as duly qualified medical practitioners:—

Allport, Robert Murrell, M.B., Mast. Surg., 1917, Univ. Sydney.

Badham, Charles, M.B., 1917, Univ. Sydney.

Dart, Raymond Arthur, M.B., 1917, Univ. Sydney.

Dawson, Frank Edwin, M.B., 1917, Univ. Sydney.

Farranbridge, Thornleigh, M.B., Mast. Surg., 1917, Univ. Sydney.

Fitzpatrick, Edwin Walter, M.B., Mast. Surg., 1917, Univ. Sydney.

Gruen, James Adolph, M.B., Mast. Surg., 1917, Univ. Sydney.

Hobson, George Elliot, M.B., Mast. Surg., 1917, Univ. Sydney.

Holland, Eric Preston, M.B., 1917, Univ. Sydney.

Holmes, Gordon Charles Wesley, M.B., Mast. Surg., 1917, Univ. Sydney.

La Touche, William Francis Digges, M.B., Mast. Surg., 1917, Univ. Sydney.

Liggins, Frederick William, M.B., 1917, Univ. Sydney.

Matters, Reginald Francis, M.B., 1917, Univ. Sydney.

Moran, Arthur Cecil, M.B., Mast. Surg., 1917, Univ. Sydney.

Ross, Mona Margaret, M.B., Mast. Surg., 1917, Univ. Sydney.

Rossell, Jack McFadyean, M.B., Mast. Surg., 1917, Univ. Sydney.

Sandford, Elma Linto, M.B., 1917, Univ. Sydney.

Sillar, Roy Allen, M.B., 1917, Univ. Sydney.
 Stokes, Edward Henry, M.B., Mast. Surg., 1917, Univ. Sydney.
 Tunks, Ormond Gillespie, M.B., 1917, Univ. Sydney.
 Wallace, Frederick Hilton, M.B., Mast. Surg., 1917, Univ. Sydney.
 Woodward, Edward Albert, M.B., Mast. Surg., 1917, Univ. Sydney.
 Robertson, Ossian, M.B., 1917, Univ. Sydney.

QUEENSLAND.

The undermentioned gentleman has been registered under the provisions of "The Medical Act, 1867," as a duly qualified medical practitioner:—

Mackechnie, Charles Alexander, Thargomindah, M.B., Ch.M., Univ. Glasg., 1885.

Medical Appointments.

Dr. Francis Guy Antill Pockley has been appointed an Honorary Ophthalmic Surgeon at the Rookwood State Hospital and Asylum, Lidcombe, New South Wales.

Dr. Philip Sylvester Clarke and Dr. William Evan McFarlane have been appointed Medical Referees under "The Workers' Compensation Act of 1916" and "The Workers' Compensation Act Amendment Act of 1916" for the whole of the State of Queensland.

The following appointments of junior resident medical officers have been made by the managers of the Alfred Hospital, Melbourne: Dr. R. A. Aitchison, of Albert Park; Dr. E. N. H. Gandevia, of Collins Street; Dr. D. S. Worch, of Malvern; and Dr. W. S. Newton, of Melbourne.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xiii.

Australian Institute of Tropical Medicine, Townsville, Queensland, Assistant.

The University of Melbourne, Department of Anatomy, Stewart Lecturer in Anatomy, Stewart Scholar in Anatomy, Lecturer in Histology and Embryology.

Nanango Hospital, South Burnett, Queensland, Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
TASMANIA. (Hon. Sec., Bel- erive, Tasmania.)	Medical Officers in all State-aided Hospitals in Tasmania.
VICTORIA. (Hon. Sec., Medi- cal Society Hall, East Melbourne.)	Brunswick Medical Institute. Bendigo Medical Institute. Prahran United F.S. Dispensary. Australasian Prudential Association Pro- prietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Ade- laide Street, Bris- bane.)	Medical Officers to the Selwyn Hos- pital, North Queensland. Brisbane United Friendly Society In- stitute. Warwick Hospital.
SOUTH AUS- TRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
WESTERN AUS- TRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Penrith, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wall- send.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wel- lington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

- Sept. 30.—Vict. Branch, B.M.A., Last Day for Election of
Two Members to Federal Committee.
 Oct. 2.—N.S.W. Branch, B.M.A., Council (Quarterly).
 Oct. 3.—Vict. Branch, B.M.A., Branch.
 Oct. 5.—Q. Branch, B.M.A., Branch.
 Oct. 5-6.—N.S.W. Branch, B.M.A., Annual Meeting of
Delegates of Local Associations with the
Council.
 Oct. 9.—Tas. Branch, B.M.A., Council and Branch.
 Oct. 9.—N.S.W. Branch, B.M.A., Ethics Committee.
 Oct. 11.—Vict. Branch, B.M.A., Council.
 Oct. 12.—S. Aust. Branch, B.M.A., Council.
 Oct. 12.—N.S.W. Branch, B.M.A., Clinical.
 Oct. 16.—N.S.W. Branch, B.M.A., Executive and Finance
Committee.
 Oct. 17.—W. Aust. Branch, B.M.A., Branch.
 Oct. 19.—Q. Branch, B.M.A., Council.
 Oct. 20.—Northern Suburbs Med. Assoc. (N.S.W.).
 Oct. 20.—Eastern Suburbs Med. Assoc. (N.S.W.).
 Oct. 25.—S. Aust. Branch, B.M.A., Branch.
 Oct. 26.—N.S.W. Branch, B.M.A., Branch.

EDITORIAL NOTICES.

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